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This Journal is the official monthly publication of the AMERICAN PHARMACEUTICAL ASSOCIATION, dedicated to the elevation and unification of the profession of Pharmacy through communication of authoritative scientific, professional, and cultural information. It is devoted to the education of pharmaceutical practitioners, and it functions as the professional voice of Pharmacy, which is directed to all members of the profession of Pharmacy in education, government, industry, and professional practice.

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Washington Views

Organized Labor's charges that medical practitioners undertake needless surgery, prolong hospitalization, engage in monopolistic practices, and overcharge, as well as organized labor's contention that it has the right to exert some types of controls over medicine, have brought the American Labor Health Association and the American Medical Association into direct opposition for debate.

A message from the President of the United States, read by his brother, Dr. Milton S. Eisenhower, informed delegates of 88 countries attending the Tenth Anniversary meeting of the World Health Organization that the United States is prepared to contribute substantially to a world wide attack on major illnesses such as cancer and heart disease.

Every single major drug group developed since the Russian Revolution (antidiabetics, vitamins, sulfa drugs, antibiotics, hormones, antihypertensives, and mental health drugs) have been discovered by the West, John T. Connor, President of Merck & Co., Inc., pointed out in a recent address to the Manufacturing Chemist's Association. The Soviet "found that it was far less costly to pirate Western drugs . . . "

Duplication of equipment, needless services, and prolonged convalescence are on their way out as self-care is being introduced in hospitals.

Because of the seriousness of antibiotic-resistant staphylococcus infections in hospitals around the world, the Joint Committee on Accreditation of Hospitals is being asked to consider the establishment of a Committee on Infections as a major factor in the accreditation of a hospital. See page 432.

Because an accident involving a nuclear reactor or radioactive materials, either in use or in shipment, while highly unlikely, could be hazardous to the public, Atomic Energy Commission radiological personnel are held in readiness in all areas of the United States to protect the public in the event of such incidents.

The health professions are becoming instruments of foreign policy as Russia with 2,750,000 members of these professions is preparing to export them to needy countries as a means of promising longer life to many peoples.

The United States with its enlarged vision in world health has proposed that the World Health Organization undertake a special study to discover more effective ways of fostering medical research on an international basis. The primary purpose of WHO is to make techniques and resources in the health field available to all those who desperately need them for their own benefit and for the ultimate benefit of all mankind.

Last Minute News

A survey by the Veterans Administration indicates that one in each 19 men over the age of 50 is faced with possible blindness from the eye disease glaucoma.

The American Red Cross has supplied intravenous fluid-making equipment valued at $9,300 by air shipment to Thailand, where it will be used to care for victims of a cholera epidemic, according to General Alfred M. Gruenther.

Recent studies indicate that the Asian influenza virus has combined with earlier strains to form a more potent flu virus.

The American Cancer Society is planning to tell teen-agers of the evidence which connects smoking with lung cancer.

In the United States somewhat over 7,000 physicians enter practice each year, whereas the figure for Russia is now 16,000.

Of the 5,000,000 alcoholics in this nation 25% of the men and 35% of the women alcoholics use drugs to excess, according to Dr. Keith S. Ditman, Director of the Alcoholism Research Clinic, University of California Medical School.

In 28 countries and territories with a population of 564,000,000, tuberculosis still tops the list as a cause of death. In the United States newer drugs and other treatment have shortened periods of hospital stay for TB patients. The cost of caring for tuberculosis patients in Veterans Administration Hospitals alone dropped $38,000,000 during the past 3 fiscal years.

One of the newest developments of veterinary medicine is the use of tranquilizers in cattle to reduce weight loss during shipment.

An amputated finger tip can be successfully sewn back to the digit if the victim seeks immediate surgical help, according to Dr. Beverly Douglas, Vanderbilt University.

Depression, impulsive behavior, obsession with insomnia, deficiencies in judgment, and alcoholism are signs which should warn the attending physician to use caution in prescribing large doses of barbiturates or other sedatives, as suicides must be considered a product of mental disease or personality aberration, says Dr. Frank B. Norbury, Norbury Sanatorium, Jacksonville, Ill.

The Better Business Bureau's annual budget for work on food and drug advertising will be increased to $40,000 as the American Medical Association becomes a sustaining member by paying dues of $5,000 a year. The AMA Public Relations Department has been working with the Better Business Bureau to avoid a vigorous open campaign by the AMA against objectionable proprietary advertising and self-medication.

American Medical Association, American Dental Association, and American Hospital Association spokesmen, appearing before the House Ways and Means Committee, opposed free medical and hospital care for persons receiving Social Security benefits. They stressed that voluntary health insurance plans should be given an opportunity to cope with the problem of health care for the aged. Extension of hospital and medical benefits under Social Security, they said, would lower the quality of medical and dental care for the aged, lead to dangerous overcrowding of facilities, and would hamper physicians with Government controls.

In the United States 97 children out of every 100 born grow up to be adults, but in some countries today as many as 30 or more out of every 100 children die.

Scientists (Drs. Aaron B. Lerner, James D. Case, Yoshiyata Takahashi, Teh H. Lee, and Wataru Mori of the Yale Section of Dermatology) have discovered the first hormone ever isolated from the pineal gland, melatonin.

American Hospital Formulary Service, designed to promote better patient care through rational drug therapy, will be issued in September. It's preparation is being directed by Dr. William Heller, chief pharmacist, U. of Arkansas Medical Center.

The 176-page Proceedings of the Fourth Pan American Congress of Pharmacy and Biochemistry, held in Washington, D.C. last November, are now being distributed.

In the presence of an illustrious gathering of notables from government, pharmacy, medicine, education, and various civic and professional groups, Dr. Leroy E. Burney, Surgeon General of the U.S. Public Health Service and President of the Eleventh World Health Assembly, was honored at a testimonial luncheon sponsored by the D.C. Medical Society and the Washington Board of Trade at the Mayflower Hotel. Washington, D.C., on July 1.

Dr. Robert P. Fischelis, APhA Secretary, addressing the 88th Annual Convention of the N.J. Pharmaceutical Association, said that State pharmacy laws must be strengthened to prevent promiscuous distribution of drugs by unqualified persons.

Long study by a committee headed by Louis Kazin, Associate Editor of Drug Topics, *has resulted in establishment of a Judicial Council of The N.J. Pharmaceutical Association with power to suspend or expel a pharmacist for unprofessional conduct.*

Reporting in *GP* for June, Dr. Lloyd F. Smith of Monrovia, Calif., says that if a baby is unwanted by a Russian mother she can arrange for a legal abortion, if the choice is made during the first 3 months of pregnancy.

The United States will soon be the only country in the world without a compulsory hospitalization insurance program, and will thus stand alone in its struggle against socialized medicine.

The United States Civil Service Commission announces examination for filling pharmacist positions in Veterans Administration hospitals throughout the country. Those with B.S., M.S., or Ph.D. degrees should contact the Executive Secretary, Central Board of United States Civil Service Examiners, Veterans Administration, Washington 25, D.C.

Eli Lilly and Company have suspended production of polio vaccine because of large supplies on hand and public apathy toward immunization.

A dynamic program of International Medical Research, proposed by Senator Lister Hill (D—Ala.), includes: Cooperative international support of medical research directed against the major diseases plaguing mankind; exchange of research workers and clinicians among the countries; distribution of drugs, medical equipment, and rehabilitation aids to all parts of the world; setting up demonstration projects to show all areas of the world the latest techniques for combating disease; an organization of an International Clearing House on the latest developments in medical research, including establishment of appropriate translation services.

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News and Notes

Associations

American Public Health Association's 86th annual meeting will be held in St. Louis, October 27–31. Attendance of over 4,000 health specialists is expected for the sessions which will be highlighted by presentation of the Albert Lasker Awards and the Sedgwick Memorial Medal.

Delta Sigma Theta will present its annual award for distinguished service to the healing arts professions to *Dr. Herman C. Nolen*, President of McKesson-Robbins. The award will be a feature of the fraternity's International Convention, September 26–28 in Long Beach, N.Y.

A new chapter, to be known as Phi Chapter, was recently inducted at the Hampton College of Pharmacy with *Pierre Brassard* as its Chancellor.

Health Information Foundation—New Chairman of the Board of Directors is *Eugene N. Beesley*, President of Eli Lilly and Company. He succeeds *George F. Smith*, Johnson and Johnson President, who was elected a Vice President of the Foundation. *George Bugbee* was re-elected HIF President.

Monmouth-Ocean (N.J.) Pharmaceutical Society—New officers are *Hans Letsche*, President; *Bert Morgovsky*, 1st Vice President; *Eugene Axelrad*, 2nd Vice President; *Carl Schultz*, Treasurer; *F. Joseph Veneri*, Secretary; *James B. Thompson*, Chairman, Executive Committee; *Morris Oretsky*, *Angelo Vasiliades*, and *Edith Pawling*, Executive Committee members.

New Jersey Pharmaceutical Association held its 88th Annual Meeting, June 15–19, in Atlantic City. Principal speaker was *Dr. Charles L. Brown*, Dean of Seton Hall School of Medicine. The Oscar Singer Award for dedication to the advancement of public health and the profession of Pharmacy, was presented to *Michael Vitale*, member of the New Jersey Board of Pharmacy.

Concerned with the shortage of druggists, Chicago drug wholesaler Louis Zahn (l) presents a check for five scholarships to the University of Illinois School of Pharmacy. Dr. David D. Henry (r), President of the University, receives the gift, while Dean George L. Webster (c) of the School of Pharmacy looks on.

Pomona Valley Pharmaceutical Association elected the following new officers at its May 27 meeting: *Louis Peterson*, President; *Lowell Jelden*, Vice President; and *Joseph Shilling*, Secretary-Treasurer.

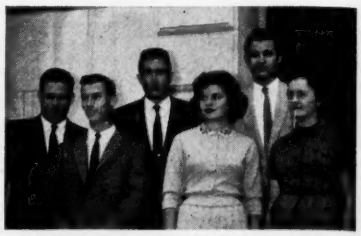
Colleges

Columbia University—*Dr. Frederick D. Lascoff*, member of the Class of '23, received the 1958 Alumni Medal at the fifty-sixth annual Commencement Day luncheon of the Columbia University Alumni Federation on June 3. Honored for his outstanding service to Pharmacy and to the Alumni Federation, Dr. Lascoff is a member of the Columbia College of Pharmacy Board of Trustees.

Elmer H. Bobst, Chairman of the Board, Warner-Lambert Pharmaceutical Company, has given an additional $100,000 to the Columbia College of Pharmacy Building Fund, making his total contribution toward the proposed new college building $200,000.

Ferris Institute—*Charles W. Dickerson*, a senior, has been named recipient of the Edwin L. Newcomb Memorial Award in Pharmacognosy. The prize of $250.00 is awarded for the most outstanding paper dealing with drug plant investigation presented in national competition among undergraduate students in schools of Pharmacy. Mr. Dickerson's paper describes the occurrence, particularly in Michigan, also the histology and the isolation of constituents of the wild, or false, lily-of-the-valley, medicinal properties of which were determined following a preliminary study of its pharmacological effects on animal tissue.

Oregon State College—*Dean George E. Crossen* has announced the appointment of the following faculty members to arrange for the next seminar to be held at the school of pharmacy: *Professor Herman Forslund*, Chairman; *Professor Harriet Sisson; Dr. R. S. McCutcheon;* and *Dr. Leo A. Sciuchetti*. The Seminar will be held on October 3 and 4 in conjunction with the 60th anniversary of the Department of Pharmacy on the Oregon State College campus. A full 2-day program is planned with outstanding speakers in the area of professional, manufacturing, and retail pharmacy participating. All past graduates and all pharmacists throughout the state will be invited and it is hoped that several hundred persons will attend the seminar.



UNIVERSITY OF TEXAS recipients of tuition scholarships, awarded by the school's Pharmaceutical Foundation, include (front row, l to r) Arlen Y. Sturdivant, Houston; Elizabeth L. King, Austin; Thelma Clarke, Houston; (2nd row, l to r) Royal Cox, Dallas; William H. Morgan, Bishop; Albert William Kahanek, Hallettsville. Not shown are Jimmy L. Burk, Austin; Mrs. Velaska Bennett, Austin; Florence G. Laxson, Texarkana; and Irma Martinez, Brownsville.

Philadelphia College of Pharmacy and Science—*Dr. Lewis C. Scheffey*, of the Class of 1915, was the recipient of the Annual Award of the Alumni Association at the Spring Reunion Dinner on May 24. Dr. Scheffey is President of the Philadelphia Section of the American Cancer Society.

William G. Crescenta, Jr., Class of 1936, was installed as 1958–59 Alumni President.

St. John's University—*Morris Badway* of Easton, Pa. was presented a check for $500 as the eastern regional winner of the annual Lunsford Richardson Pharmacy Awards competition. The presentation was made at the College of Pharmacy annual Senior Night by *Dr. M. L. Moore*, Vice President of the Vick Chemical Company, which sponsors the competition in cooperation with the William S. Merrell Company and the National Drug Company.

South Dakota State College—*George A. Bender*, originator and editor of the History of Pharmacy series of paintings for Parke, Davis & Company, was awarded an honorary Doctor of Science degree at

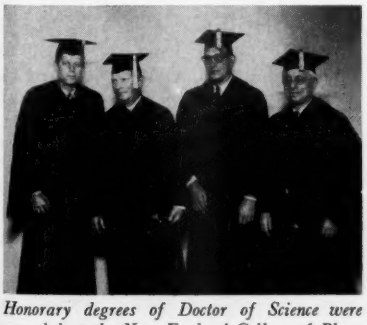
commencement exercises on June 2. *H. M. Crothers*, Acting College President, said that Bender's "record in the field of Pharmacy clearly makes him one of our most distinguished graduates."

University of Houston—The new Beta Omicron Chapter of Rho Chi was installed on May 10, and the following officers were elected: *Norman Neiswender*, President; *Albert Kaszycki*, Vice President; *Athol Price*, Corresponding Secretary; *Martha Jane Jones*, Historian; and *Dr. Homer Lawrence*, Sponsor and permanent Secretary Treasurer.

University of Maryland—*Dr. Robert L. Swain*, Past President of APhA, was among those receiving honorary degrees at the June 7 Commencement Exercises. Dr. Swain, a graduate of both the School of Pharmacy and the School of Law of the University, was awarded a Doctor of Science degree.

At the same time, honorary Doctor of Laws degrees were presented to *Dr. Milton S. Eisenhower*, President of Johns Hopkins University, and to *Dr. Wilbur A. Malcolm*, President of the American Cyanamid Company. Dr. Malcolm, who has been Cyanamid President since 1957, holds B.S. and Ph.D. degrees from the University.

University of Nebraska—*Dean Joseph B. Burt* announced the establishment of the Rufus A. Lyman Memorial Fund, in commemoration of the founder and first Dean of the College of Pharmacy. In the belief that many who either knew Dr. Lyman personally or by reputation would like to join them in supporting this activity, the Advisory Committee is inviting contributions to the Lyman Fund.



Honorary degrees of Doctor of Science were awarded at the New England College of Pharmacy commencement, June 7, to (l to r): Senator John F. Kennedy of Massachusetts; David T. Scott, Chairman of the Board of Trustees of the College; Boone Gross, President of The Gillette Company; and Samuel Silverman, Counsel for the Massachusetts State Pharmaceutical Association and the Boston Association of Retail Druggists.

Dr. Robert A. Hardt, Executive Vice President for Marketing of Hoffmann-LaRoche, was among the recipients of the University's Distinguished Service Awards presented June 7.

University of Wisconsin was the scene of the sixth national Symposium of the American Chemical Society's Division of Medicinal Chemistry, June 22–25. Twenty-six experts from the United States, England, and Mexico discussed the latest developments in drug research before more than 350 scientists from all parts of the nation. The School of Pharmacy, celebrating its 75th anniversary, was host to the Symposium.

Government

Army Medical Service Corps celebrated its 41st anniversary on May 17. *Col. Bernard Aabel*, Chief of the Corps, headed the committee on arrangements for the reception and buffet supper which marked the event and which were attended by more than 500 guests.

Atomic Energy Commission—Chairman *Lewis L. Strauss* announced on June 7 the approval of grants totalling $1,900,321 to 41 American colleges and universities to be used to expand facilities for training nuclear scientists and engineers. These grants are part of the Commission's program to help in avoiding a shortage in future years of trained manpower in the atomic energy field. Funds will be applied toward the purchase of laboratory equipment needed to broaden nuclear science and engineering curricula.

Department of the Air Force—*Col. Howard B. Nelson* (Retired) was presented the Air Force Commendation Medal on May 13 for meritorious service in duty as Health Supplies Specialist in the Office of Defense Mobilization from October 1956 to November 1957. He was cited for recognizing the importance of medical materiel and adequate water supply to the survival of the United States; conceiving and directing an interagency program to define and identify survival-type items of medical and sanitation materiel; and planning and executing surveys during the "Operation Alert" exercise of 1957 to establish the validity of selected items. As a result of Colonel Nelson's efforts, a firm foundation was laid for determination of Government policy in this area. One of the original group of pharmacists who qualified for a commission in the Pharmacy Corps of the U.S. Army when it was authorized, Colonel Nelson is now affiliated with Smith Kline and French Laboratories as Professional Representative for Federal Health Services.

Sr. Miriam Francis, S.B.S., Dean of Faculties (l), and Dr. Lawrence Ferring, Dean of Xavier University College of Pharmacy (second from r) pose with Paul Landix (r), oldest practicing pharmacist in New Orleans, and Arnetta Pierce (second from l), youngest practicing pharmacist, at the week-long pharmacy refresher course held recently at the Xavier University College of Pharmacy. Miss Pierce and Mr. Landix received certificates of merit at the course, which was under the direction of Warren P. McKenna.

Department of State—The United States is providing Thailand with 10,000 bottles of cholera serum and is offering the facilities of the Mutual Security Program to fight a threatened major cholera epidemic. Reports from Bangkok state that several hundred persons have been stricken with the disease, with more than 100 dead in early June. The supply of vaccine sent to Bangkok is sufficient for the vaccination of one million persons.

Fulbright Awards—Applications for 1959–60 should be made by October 1, 1958. Information on the awards may be obtained from Conference Board of Associated Research Councils Committee on International Exchange of Persons, 2101 Constitution Avenue, Washington 25, D.C.

Public Health Service—*Surgeon General Leroy E. Burney* recently announced the promotion of the following to the rank of Assistant Surgeon

Continued on page 402

 Continued from page 401

General: *M. Allen Pond, Harry G. Hanson,* and *Dr. John C. Cutler.*

A national conference to evaluate the Professional Nurse Traineeship Program will be held in Washington, August 13–15, under the Chairmanship of *Dr. John Millett,* President of Miami University, Oxford, Ohio.

Walter W. MacDonald has been appointed to the Surgeon General's Advisory Committee on Indian Health for a 4-year term beginning July 1. A member of the Flathead Indian Tribe, Mr. McDonald is Chairman of the Confederated Salish and Kootenai Tribal Council and is a member of the Executive Committee of the National Congress of American Indians.

Industry

Abbott Laboratories—The Abbott Foundation has awarded 24 college scholarships to children of employees of Abbott Laboratories. *Elmer B. Vliet,* Vice President and Scientific Administrator, and Chairman of the Scholarship Committee, announced that this will bring to 43 the number of students who will receive aid from the Foundation, which is an educational and philanthropic trust established under the will of the late Clara A. Abbott, wife of Dr. Wallace C. Abbott, founder of the company.

John J. Brennan has been promoted to Field Sales Manager of the Chemical Sales Division. *Robert S. Frye* has been appointed Manager of the Standards and Methods Department.

Becco Chemical Division, Food Machinery and Chemical Corporation, has *Albert P. Shutts* as its new Sales Manager. A graduate of Rutgers, he joined Becco in 1946.

Crookes-Barnes—*Dr. Arnold O. Jackson* has been appointed Assistant Director of Clinical Investigation of Crookes-Barnes Laboratories. Formerly with G. W. Carnrick Company, Dr. Jackson has 25 years of experience in the pharmaceutical field. He will be responsible for coordination of new product testing in his new position.

Dartell Laboratories—*Paul Wickman* has been named Executive Vice President of the Los Angeles firm which will soon be undergoing an expansion program. Formerly Executive Director of the Public Relations Society of America, Mr. Wickman was a recent Director of Public Relations for Schering Corporation.

Lederle Laboratories—*Dr. Avron H. Ross* of East Meadow, N.Y. has been awarded a research grant of $1800 for the study of the effect of immune globulin on the course of chicken pox. The Lederle-sponsored award will help Dr. Ross make comparisons of the severity of the disease in children who have received immune globulin and those who have not. The substance is used to give temporary protection against measles and infectious hepatitis, or to modify the course of these diseases. It also gives temporary immunity to paralytic polio. Dr. Ross will be assisted in his study by about 15 Nassau County pediatricians.

Eli Lilly and Company has been assigned a patent (No. 2,837,460) covering preparation of a whooping cough vaccine without harmful side reactions. The patent was granted to *Dr. Otto K. Behrens,* Director of Lilly's Biochemical Research Division, and his colleague, *Dr. Paul W. Ensminger.* The new process utilizes charcoal, agar, and phenolic compounds rather than saline or alum solutions and is claimed to free the patient from possible danger of toxic symptoms such as fever and tissue irritation following injection.

OUTDATED POLIO SHOTS at Louis Zahn Drug Co., Chicago, are shown to Ronnie Filips, 6, the 1958 March of Dimes polio king in Chicago. Mr. Zahn (l) is showing Ronnie some of the 18,000 vials of polio vaccine his firm alone is returning to Eli Lilly because of public indifference to the poliomyelitis threat.

Mead Johnson & Company—*Dr. Edgar A. Hawk* has been appointed Medical Director of the Parenteral Products Division. Formerly a staff physician with Upjohn, Dr. Hawk was, prior to 1954, connected with the U.S. Public Health Service as a medical researcher. In his new position he will render medical opinions and technical service on products, determining product characteristics, maintaining safety in the use of Mead Johnson parenterals, and expanding and maintaining professional contacts for his Division.

Nion Corporation—*Don Bleitz,* Executive Vice President of the Nion Corporation, has received an engrossed resolution in scroll form from the County of Los Angeles which reads in part as follows:

"WHEREAS, *The Saturday Evening Post* of September 14, 1957 has brought signal honor to Don Bleitz, a young man of this state and county, because of his unparalleled contribution to the sum of scientific data regarding bird life in many parts of America; and

"WHEREAS, years of labor in the field of color photography have produced actual photographs of a great variety of birds in their native habitats, so vivid and so accurate that the *Post* declares they establish him as the twentieth century successor of John James Audubon whose pictures of American birds have never been surpassed in the century since he produced them; and

"WHEREAS, Don Bleitz, ably assisted by his lovely wife Elvirita, has not only produced the most remarkable color photographs of bird life but has also devised and perfected many mechanical devices and technical processes . . .

"WHEREAS . . . this husband and wife have established the Bleitz Wild Life Foundation, a philanthropic enterprise to further advance the science of ornithology and wider interest in many aspects of nature; . . .

"NOW, THEREFORE, BE IT RESOLVED by the Board of Supervisors that Don Bleitz together with his wife, Elvirita, be awarded this scroll as a token of our great county's pride in and appreciation of the lasting scientific contributions which Mr. Bleitz and his wife have made. . . ."

Owens-Illinois—*James F. Ryley* has been named Manager of the Scientific Sales Division of Kimble Glass Company, Owens-Illinois subsidiary. He will succeed *Edwin J. Rhein* who will retire August 29 but who will continue to serve as consultant to the Scientific Division.

E. L. Patch Company—*Professor Robert A. Walsh* was elected a Vice President at the Company's Annual Meeting on May 21. For many years he has been Director of Research and Product Development for his firm. Other officers re-elected were: *Fred A. Lawson,* President and General Manager; *Milton J. Keppler,* Vice President; *John J. Van Tichelt,* Secretary; *Francis A. Clarke,* Treasurer; *Ralph B. Truesdale,* Assistant Treasurer; and *William S. Lister* and *Earle L. Sims,* Company Directors.

Schering Corporation broke ground on June 12 in Union, New Jersey, for its $1,500,000 microbiological research and development laboratory. The new building will provide Scher-

Continued on page 404

When the new mother inquires re the baby's bath —Recommend:

pHisoHex®

protects baby's skin the hospital way

Helps to prevent

DIAPER RASH
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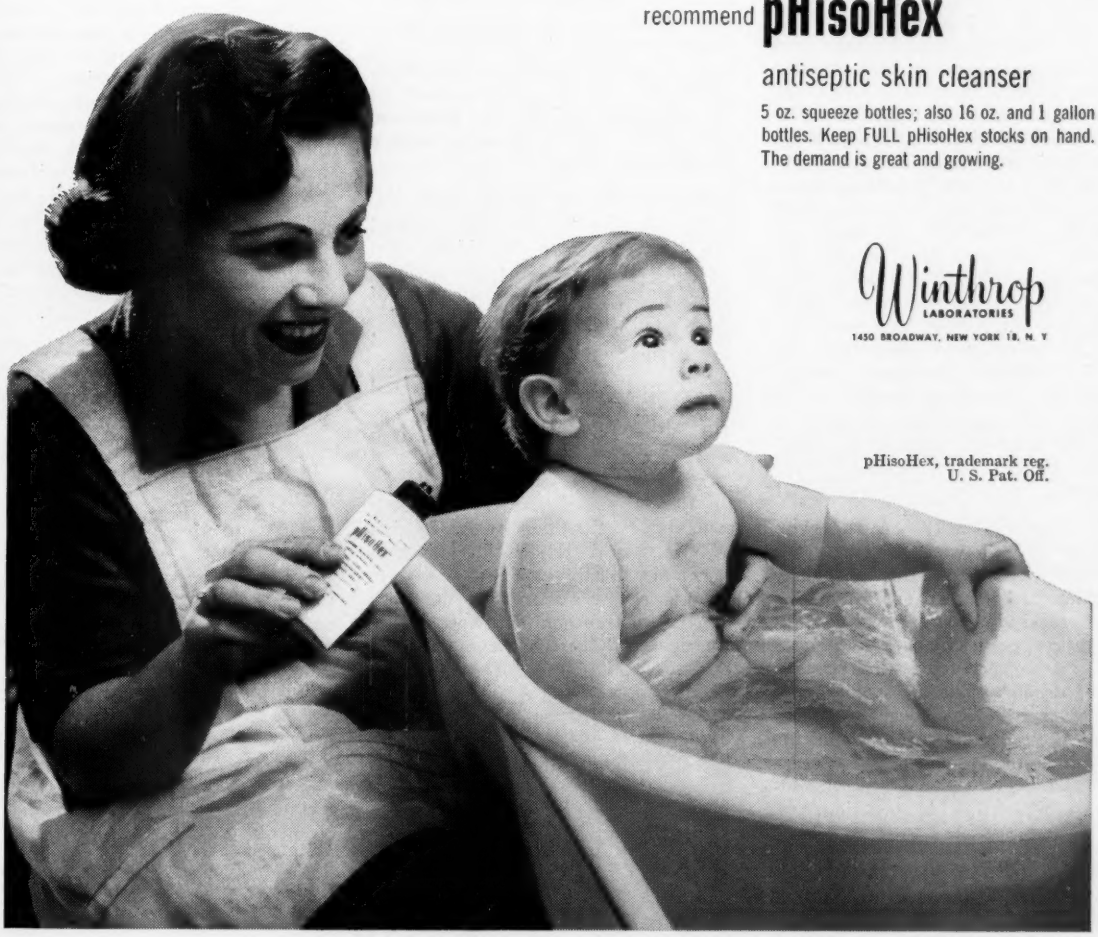
CRADLE CAP

pHisoHex is used exclusively in many leading hospitals for bathing babies and for washing the hands of all nursery personnel. Such routine has produced a sharp reduction in skin infections of babies.

For "HOSPITAL CLEAN" skin at home
recommend **pHisoHex**
antiseptic skin cleanser

5 oz. squeeze bottles; also 16 oz. and 1 gallon bottles. Keep FULL pHisoHex stocks on hand. The demand is great and growing.



Winthrop LABORATORIES
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pHisoHex, trademark reg. U. S. Pat. Off.

ing with facilities to seek a new broad spectrum antibiotic.

E. R. Squibb & Sons announced recently the creation of a new sales division in the southeastern part of the United States, the Atlanta Division, with headquarters in Atlanta Ga. *Raymond J. Powers*, formerly a retail pharmacist who has been with Squibb since 1952, will head the Division.

Dr. Max Ben joined the staff of the Squibb Institute for Medical Research earlier this year. He will be associated with the Division of Biochemistry.

Sterling Drug Inc.—*James N. Cooke*, Sterling Vice President, has been named President of the National Brands Division, the largest single unit in the company's organization. *Stanley I. Clark*, also a Sterling Vice President, has been appointed Executive Vice President of National Brands. Other new appointments include: *A. J. Burns*, Sterling Vice President, as Director of Production, Distribution and New Product Development for National Brands; and *John Edward Grimm, III*, Sterling Divisional Vice President, as Director of Sales for National Brands.

O. W. Ergenzinger, also a Sterling Vice President, has retired after completing 45 years' service with the company. He has long been identified with the Phillips' Milk of Magnesia product line and has participated actively in industry-wide affairs through the Proprietary Association.

Charles E. Alford has been appointed Director of Personnel and Public Relations for the Sterling-Winthrop Research Institute. A graduate of the Albany College of Pharmacy, he is a member of APhA and of the Institute of Food Technologists.

In association with the College of Medical Evangelists, Loma Linda, California, Sterling Drug Company has launched a program for the discovery and development of natural substances, primarily plants, used as medicines by primitive tribal groups. This project will be an expansion of the activities of the College's School of Tropical and Preventive Medicine and will employ a staff of five persons to be assisted by College faculty members in this world-wide operation.

Strong, Cobb Company—President *John N. Eustis* announced the appointment of *Fred J. Bandelin* as Director of Pharmaceutical Research and Development. Prior to this he was Technical Director of Flint, Eaton & Company and had been associated with Vick Chemical Company, Fidelity Medical Supply Company, and William S. Merrell Company. A member of APhA, Mr. Bandelin holds a degree from Cincinnati College of Pharmacy.

Francis Boyer (l) was elected Chairman of the Board of Smith Kline & French Laboratories on May 15. He is succeeded as President of the Company by Walter A. Munns (c). Dr. Howard L. Reed (r) was appointed Assistant Dean of the Massachusetts College of Pharmacy on May 28.

Stuart Company recently opened its new building which was designed by *Edward D. Stone*, creator of the American pavilion at the Brussels World's Fair. Constructed on a slope of the San Gabriel Mountains in Pasadena, California, and planned as a work of art as well as an industrial structure, the building represents an innovation in industrial planning.

Warner-Chilcott Laboratories—*Dr. Robert A. Turner* has been named Assistant to firm President *Dr. Leonard A. Scheele*. In this position Dr. Turner will assist in all areas of responsibility, particularly in maintaining liaison with the newly created Warner-Lambert Research Institute. Dr. Turner was previously connected with Sandoz Pharmaceuticals as Director of Pharmacological Research and with Ciba Pharmaceuticals.

Dr. Leonard A. Scheele was chosen an Honorary Delegate to the Tenth Anniversary Commemorative Session of the World Health Organization which met in Minneapolis in late May. He was the only such Delegate from the pharmaceutical industry among those named by the Department of State.

Warner-Lambert Research Institute—*Dr. L. Earle Arnow*, President, has announced the appointments of the following: *Dr. Charles C. Scott* as Vice President for Basic Sciences; *Dr. George Mast* as Vice President for Product Development; *Dr. Donald H. Powers* as Director of Toiletries and Cosmetics; *Dr. Joseph M. White* as acting Head of the new Division of Clinical Research; and *Eliot Steinberg* as Director of Research Administration.

Wyeth Laboratories will increase its basic research facilities by 65% with a new ultra-modern laboratory to be constructed adjacent to the firm's Institute for Medical Research at Radnor, Pa. The new facilities will enable Wyeth to increase its study of infectious diseases and substantially expand research in organic chemistry. Additional space will also be made available for a more extensive radioactive research program.

International

British Columbia Pharmaceutical Society—The 67th Annual Meeting of the Pharmaceutical Society of British Columbia, June 10–13, reflected the spirit of the 100th Anniversary celebration of the founding of the Province in 1858. *Dr. Eric W. Martin*, as honored guest and principal speaker for the occasion, addressed a large interprofessional group on medical quackery on the evening of June 11. In addition to some 150 physicians and their wives, a large number of dentists, nurses, pharmacists, hospital administrators, and government officials, most of whom also were accompanied by their wives, were present and enjoyed several hours of entertainment and fellowship following the address. Dr. Martin addressed the General Session of the Society the following morning on professional trends and problems.

Catholic World Health Conference—The theme of the first such conference, which will be held July 27 to August 3 in Brussels, will be Christianity and Health. Among the speakers will be *Chancellor Adenauer* of the German Federal Republic and *Dr. John R. Cavanagh*, President of the U.S. Guild of Catholic Psychiatrists.

Retailing

New York Retail Druggists Association announced that they have extended the contract of their Executive Secretary, *Benjamin L. Gudes*, beyond 1960. Mr. Gudes has served in his present position since 1953.

The Association's annual banquet was held in the Astor Hotel in New York with over 600 people present. Honored at the affair were *Leo Martin*, immediate Past President, and *Benjamin Fleishman*, President of the New York State Pharmaceutical Society.

Branch News

Local Branches

Charleston Branch—New officers elected are *John F. Baker, Jr.*, President; *Arthur J. Guida*, Vice President; *Ernestine L. Strickler*, Secretary, and *Elliott P. Botzis*, Treasurer. *Dr. W. A. Prout* and *Elliott P. Botzis* were elected Delegate and Alternate, respectively.

Indianapolis Branch—*George Diener*, Vice President of Butler University, was the featured speaker at a recent seminar on "Modern Pharmacy." His talk, "Over the Counter," emphasized problems encountered by the pharmacist and other related professions. Officers for 1959, previously elected, were installed.

Northwestern Branch—*S. Foster* of the Food and Drug Administration spoke at the April meeting of this branch on various kinds of "gimmicks" on the market today supposed to "cure" cancer. He also talked on methods used to get evidence against house-to-house salesmen engaged in unlawful sale of vitamins.

Philadelphia Branch—The May dinner-meeting honored Past Presidents of this branch, most of whom were present. On the program was *Dean Roy Bowers* of the Rutgers University School of Pharmacy, who spoke on the APhA functions, its Council, House of Delegates, Sections, and affiliated organizations, and how the industrial pharmacist and other specialized groups may operate effectively within the APhA organization. A lively informal discussion period followed. The concluding portion of the session was given to reports from delegates on the Los Angeles Convention, and officers were elected for 1959. These were: *Earl A. Kimes*, President; *Walter F. Charnicki*, Vice President; *William L. Madison*, Secretary; and *William H. Helfand*, Treasurer.

Puget Sound Branch—On the program of the March meeting future branch activities were discussed: *Al Hagg* reviewed its history; *George Henrikson* talked on some of the problems to be worked out; *Ted Taniguchi* presented a proposed resolution on local branches to be submitted to a national convention; and *John Martin* reported on pending Federal legislation.

ALBANY COLLEGE OF PHARMACY STUDENT MEMBERS installed 1958–59 officers at a dinner May 5. L to r: Professor R. V. DeNuzzo, Faculty Adviser; Katherine F. Zobel, Treasurer; Joseph Chiarella, Outgoing President; Peter Murray, President; Nancy Welch, Secretary; Paul Weiseman, guest speaker; and Robert Stote, Vice President.

The May meeting program included *Dr. R. M. Levenson*, Seattle specialist, who talked on "Heart Disease"; *Paul A. Monroe*, Committee Chairman, representing 50 Northern Seattle pharmacies, presenting plans to promote construction of the new Northwest Memorial Hospital; and *Ted Taniguchi*, APhA Delegate, House of Delegates, reporting on Los Angeles Convention events.

Officers elected for 1959 are: *Joseph E. Birmingham*, President; *Fred R. Haskins*, Recording Secretary; *Theodore T. Taniguchi*, Corresponding Secretary; and *James F. Button*, Treasurer.

Student Branches

Alabama Polytechnic Institute—Student officers for 1958–59 elected are: *William R. Salter*, President; *Edward O. Duke*, Vice President; *Jackie Crawford*, Secretary; *Fred M. Woods, Jr.*, Treasurer; and *Klise Adum*, Publicity Chairman.

Albany College of Pharmacy—Spring programs included a retail pharmacy forum and a social dinner meeting. *R. Weisman* served as moderator at the earlier meeting. Panel members were: *P. Hempstead, Joel Goldwin, J. Resnik*, and *Nancy Welch*. A question and answer discussion followed. *Paul Weiseman*, former head of research activities for Norwich Pharmacal Company, spoke at the social meeting on the history of Pharmacy, its future, and the necessity of putting more emphasis on professional aspects of Pharmacy.

Drake University—Special talks at the closing spring meetings were given by *John Rabe* of the Iowa Narcotics Board, who lectured on drug addiction with accompanying film depicting the origin, effects, and cure for narcotics use; and *Dr. Floyd M. Burgeson*, a prominent Des Moines physician, who talked on "Pharmacist-Physician Relationship," pointing out problems to be studied and solved. Officers elected for 1958–59 are: *Martin M. Schuele*, President; *William R. Bell*, Vice President; *Kay Harvey*, Secretary; and *Edwin C. Rymek*, Treasurer.

Duquesne University—Election of 1959 officers was held at the Campus Theatre May 22. Elected were: *Edmund Dodginski*, President; *Richard Cast*, Vice President; *Mary Jo Reilly*, Corresponding Secretary; *Ursula Stockina*, Recording Secretary; and *Barbara A. Champion*, Treasurer.

Fordham University—*Dr. Austin Joyner*, Director of Sales Education of Lederle Labs., spoke on April 16 on "Pharmacy Research in the Future."

Loyola University—At their 21st annual banquet-dance, 87-year-old *John E. Scott* of New Orleans was presented with Loyola University's College of Pharmacy Annual Award for being the Louisiana 1958 oustanding pharmacist. *Frank Savoy*, a Phar-

Continued on page 406

macy College Senior, won the Annual Student Award. A painting of the late *John F. McCloskey*, Dean of the College of Pharmacy, was presented in the presence of *Mrs. McCloskey* by *H. F. Anderson* of New Orleans. Speakers on the program were *Dr. Gordon McHardy*, New Orleans physician, who talked on the dangers of certain modern "wonder" drugs; *Dr. Edward J. Ireland*, Acting Dean of Loyola's College of Pharmacy; and *Carl A. Jeansonne*, 1958 President of the APhA Student Branch. *Oliver H. LeBlanc* acted as master of ceremonies.

At a later meeting election of officers for 1959 made *William M. Curry, Jr.*, President; *Carl J. Kahn* Vice President; *Shirley M. Talamo* Recording Secretary; *S. Paul Rozas* Corresponding Secretary; *Sidney J. Dupois* Treasurer; and *Salvador F. Alphonse* Historian.

St. John's University—"Youth Looks at Pharmacy," the annual forum for talks by students of this branch, was held on April 22, with the following speakers taking part: *Edward Patak, Serafino Giordano, Anthony Kuhlmann, Michael Kopcho, Richard Diehl, Morris Badway*, and *Murray Stollwerk*. *Professor Ignatius J. Bellafiore*, Faculty Adviser, directed the program. *Robert Tillander*, President, opened the session with a welcoming talk to the students, and *Stanley Aaron*, Secretary, presided as Chairman.

St. Louis College of Pharmacy—At a joint meeting with Rho Chi, a seminar on Pakistan was presented by *Riaz A. Sheikh*, graduate student; and *Dr. Larina Jamaldni*, intern at Missouri Baptist Hospital. "Pharmacy in Pakistan" and "The Role of Women in the New Nation" were discussed. Colored slides illustrating the old and the new in Pakistan were shown by *Sister Paulette Elking*, a Medical Mission Sister, and *Tom Wand*.

At a previous Rho Chi and student branch joint meeting *Ronald Macebo*, student member from India, described social and economic problems and the pharmacist's status in his country. His lecture was also accompanied by slides shown by *Sister Paulette Elking*.

State University of Iowa—*Dr. Clyde Berry*, Assistant Director of this university's Institute of Agricultural Medicine spoke on "Relationship between Agricultural Medicine and Pharmacy." He also explained why this institute is the first of its kind in the United States.

Temple University—Results of April election of officers are: *Henry DiTommaso*, President; *Larry Dilks*, Vice President; *Clare Long*, Cor. Secretary; *Barbara Ricca*, Rec. Secretary; *Marc Hartman*, Treasurer; and Class Representatives for 1959–60–61 will be *William Geyer, Stanley Kulaga*, and *Gerald Gentilotti*. Delegate to the 1958 APhA Los Angeles Convention was *Eugene McBride*.

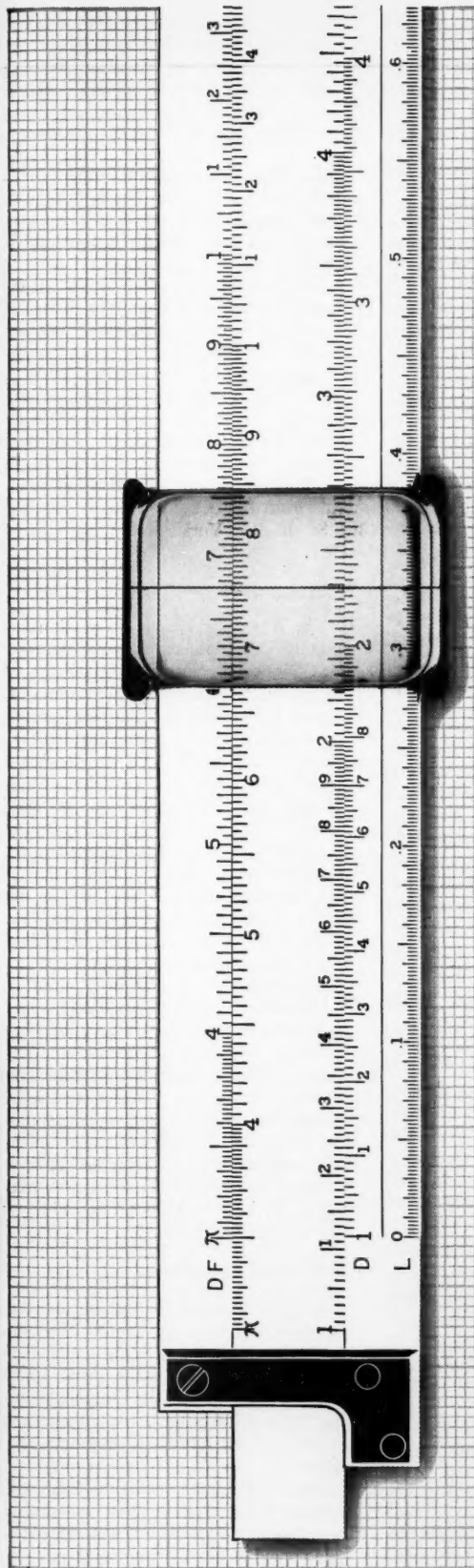
University of Arkansas—During their annual senior trip, May 4–9, graduating students visited New York City, Washington, D.C., and other points, making tours through plants of E. R. Squibb & Sons, Charles Pfizer and Co., and Lederle Laboratories. Officers elected for 1959 are: *Elmer J. Bowen*, President; *Urban B. Bond, Jr.*, Vice President; *Georgie Ransom*, Secretary; and *James T. Tapp*, Treasurer.

University of Georgia—Pharmacy Day was climaxed by the Awards Banquet, both held on April 20 this year at the newly opened Georgia Center for Continuing Education, Athens, Ga. The program included a seminar with speakers: *Mrs. Evelyn Peacock* of the Atlanta Economy Drug Co.; *Dr. Carl Pfeiffer*, pharmacologist from Emory University; and *Dr. Seldon D. Feurt*, Head of the Department of Pharmacology, University of Georgia. At the Awards dinner, speakers were *Dr. O. C. Aderhold*, President of the University of Georgia; *W. T. Edmunds*, President of the Pharmacy Alumni Association; and *Calvin W. Parker*, President of the Senior Class and master of ceremonies. Highlight of the day came when *Dean Kenneth L. Waters* presented achievement prizes to 20 outstanding students and certificates to wives of graduating seniors to honor them for helping their husbands through school.

University of Kansas City—Officers elected for 1959 are: *Howard H. Roberts*, President; *Donald G. Smith*, Vice President; *Rosalee J. Saladino*, Secretary; and *John R. Lyon*, Treasurer. These were installed at the final social event of the season, a dinner dance, and for his work during the year Past President Jay Peckham was presented with a gift pin. Wives of the senior students each received "PHT" or Pushed-Husband-Through certificates.

University of Washington—*Dr. Varro Tyler* of the College of Pharmacy of this University will serve as Faculty Adviser to the student branch during the coming year, replacing *Dr. Alain C. Huitric*.

CHICAGO BRANCH Installs 1959 Officers. L to r: Philip Ritzlin, 1st Vice President; Milton Prizant, 2nd Vice President; R. David Allen, President; Earl Friesnecker, 3rd Vice President; Dr. James Gearien, Secretary-Treasurer; William Morse, Councillor.



Announcing

PRONOUNCED TAY-O

Tao*

(brand of triacetyloleandomycin with glucosamine)

Capsules / Oral Suspension

a new antibiotic derivative *designed for superior control* of common infections

There are two reasons why TAO will soon be one of your profit leaders.

1 TAO offers the physician now using the penicillins or erythromycin these telling advantages:

Control of the common infections, but minimal interference with normal G.I. flora

The spectrum of erythromycin, plus faster and greater absorption and effectiveness against organisms (notably staphylococci) resistant to erythromycin

Greater range of efficacy than the penicillins, without penicillin resistance or its sensitivity reactions

2 TAO is being backed by the most intensive promotion in ROERIG's history. Order now from your usual source of supply.

Supplied: TAO Capsules—250 mg. and 125 mg., bottles of 60. TAO for Oral Suspension—1.5 Gm., 125 mg. per teaspoonful (5 cc.) when reconstituted; unusually palatable cherry flavor; 2 oz. bottle.

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Current Comment

Vacation with a Purpose

During the week of September 8–15, the International Pharmaceutical Federation will convene in Brussels. Those attending will be able to visit the Brussels World's Fair, which is being held during the period April 17 to Oct. 19.

A special tour has been arranged for APhA members and friends through the combined facilities of Travel, Inc., 1001 Connecticut Avenue, N.W., Washington 6, D.C. and Sabena Belgian World Airlines. The package tour at a total cost of $1,080 includes visits to Zurich, Berne, Rome, Paris, and London. All transportation costs, hotels, meals, sightseeing, and baggage are included. In order to reserve space at this special rate, Travel, Inc. must receive payment before July 15, 1958.

A valid passport and a smallpox vaccination certificate, valid within the last 3 years and certified by the local Board of Health, are necessary.

Who Will Be First?

In an incisive, vigorous speech to the 77th Annual Meeting of the Proprietary Association May 12, 1958, Dr. Albert H. Holland, Jr., threw down a challenge to the Proprietary Association to assume leadership in solving some of Pharmacy's problems. He said:

"If the team concept has any basis in fact, then it must be said that the health team or tribe now also has clans. It is now for you to decide whether you will make efforts to reunite and build or to further defect and destroy. . . . Defection is born of selfishness, when actually what is needed is wisdom, tolerance, and understanding. Who will take the lead? Who can lead? Who will be first? The Proprietary Association or some other group?"

He then raised some pointed questions concerning the procedures of the Proprietary Manufacturers. He said:

"How many proprietaries do you advertise directly to the physician for his professional use? . . . how many proprietary products are actually supported by good sound scientific data? . . . There are still too many proprietary products not acceptable for advertising in first-rate medical journals. There are far too few good papers on proprietaries published in the medical literature.

"Some of you do depend on doctors to run your clinical tests. I know this for a fact, I saw it on television. Yet I question how much heed some pay to the oft expressed ethical principle that physicians should not be portrayed in promotional pitches on the screen. Oh, but you say there are only 150,000 or so practicing physicians and they're really not our customers anyway. Let me point out that these 150,000 individuals are in a position to influence many millions of people who are your customers. By ignoring good taste and the wishes of the medical profession, you are courting trouble in my opinion. By such actions you are unwittingly stimulating the development and sale for so-called over-the-counter ethicals. You are directly creating a market for your major competitor, and you have the doctor's help, but on your competitors' side. The greatest threat to the proprietary market today, in my judgment, comes not from organized Pharmacy, but rather from the entrance of prescription manufacturers into the nonprescription market. Similarly I believe that the greatest threat to Pharmacy comes not from the sale of proprietaries in nondrug outlets, but rather from the fact that their battle may be lost because they fail to distinguish the forest from the trees. Preoccupation with attempting to keep proprietaries in the drug store precludes the devotion of their attention to the constructive long-range effort necessary to retain the over-the-counter ethicals in the pharmacy."

VA Hometown Pharmacy Program

Two principal changes have been made in the contracts under the VA Hometown Pharmacy Program, according to Vernon O. Trygstad, Director of Pharmacy Service, Veterans Administration. Adjustments have been made in the prescription pricing schedule, and the formula has been revised for calculating allowances to the associations for administrative services. The following features in the prescription pricing schedule should be noted:

The minimum price has been changed from 50¢ to $1.00.

Increases have been provided in most prescriptions which are priced basically by volume or quantity.

Sixty-six percent above wholesale is retained as the mark up for all prescriptions calling for original manufacturers' sizes.

Seventy-five percent, 100%, 150% are retained as the markup on various portions of broken lots costing up to $4 wholesale.

The VA is retaining a provision which has always been in effect, that prices charged the VA will not exceed prices charged the general public for the same prescriptions. The 75% markup will require a minimum of adjustment from the schedule price to conform to prices charged the general public.

Deaths Due to Heart Disease

In a recent study made by the American Heart Association, the United States leads in a group of 18 countries studied. The death rate per 100,000 population was over 900 in the following states: S.C. (1,067), D.C. (1.049), Ill. N.J., Pa., Md., Nev., Mass., R.I., N.Y. and Calif. The death rate from cardiovascular disease in this country has more than doubled in the last 50 years.

Between the ages of 45 and 64, more than half the deaths in the U.S. are due to cardiovascular disease; between 65 and 74 nearly 2 out of 3; and in the age group 75 and over nearly 3 out of 4. Over 90% of the deaths from cardiovascular disease are caused by arteriosclerosis and hypertension. A booklet entitled "Cardiovascular Diseases in the U.S.—Facts and Figures" is available from the American Heart Association, 44 East 23rd Street, New York City.

Lifetime Research Posts

The American Heart Association has appointed 3 more career investigators: Dr. David B. Sprinson, Professor of Biochemistry, Columbia University College of Physicians and Surgeons, working in the field of intermediary metabolism; Dr. John V. Taggart, Professor of Medicine, also at Columbia, a physiologist and biochemist whose chief sphere of interest is the kidney; and Dr. Lewis W. Wannamaker, Associate Professor of Pediatrics, University of Minnesota Medical School, whose research is concerned primarily with the way in which streptococcal infections apparently trigger rheumatic fever.

This brings to a total of 6 those investigators who receive $30,000 per year each to cover salary and help underwrite laboratory expenses. The American Heart Association and its affiliates in this manner foster unrestricted research on a lifetime basis by outstanding scientists. It relieves the recipient of pressures arising from short-term forms of support, for the need to supplement his income through teaching or other nonresearch activity.

Emotional Boundaries

In order to be useful, happy, and live gracefully, persons in the interviewing professions who deal with other persons' emotional problems must know their own emotional boundaries, according to Dr. Charles D. Aring in a recent *Journal of the American Medical Association.*

One of the most difficult tasks encountered by man is that of learning how to listen to another's problems without involving himself emotionally. Dr. Aring says the goal is to learn how to listen and help on the basis of conscious

awareness of the situation and not on a reflexive reaction. The goal is empathy instead of sympathy. This is the goal of the deans of the colleges of pharmacy, pharmaceutical administrators, and others throughout our profession also.

Sympathy means the act or capacity of entering into or sharing the feelings of another and becoming similarly affected. When one is sympathetic he does not remember his own boundaries. Empathy means putting one's self in another's place and understanding the situation but always maintaining an awareness of one's separateness. When one is empathetic, there is the possibility of helping to solve the problem.

ParcelAir

The demand for fast and economical transportation of materials in the drug and pharmaceutical field is being fulfilled with the inauguration of ParcelAir, a new method of shipping by air which provides 1- to 3-day delivery to any town in the country at rates comparable to surface transportation.

A 20-pound package shipped by air express from Los Angeles to New York, with $50 insurance coverage, would cost $17.08. By air freight it would cost $19.70; by air parcel post $16.20; and by ParcelAir only $4.90. Ground transportation by rail express was quoted at $5.42, with straight parcel post $3.95.

Key to the simplicity and economy of the ParcelAir operation is the use of ParcelAir stamps to prepay and predetermine the door-to-door costs of the new service. A chart provided each shipper lists the state-to-state rates, rather than zone rates, with the costs of shipping the same to any locality within the state.

Journal Advertising

In a recent talk entitled "Let's Do Something for the Pharmacist," Arthur C. Emelin, President, Wallerstein Company, Inc., N.Y., covers the major types of information that practicing pharmacists would like to see in advertisements directed toward them in pharmaceutical journals.

He stressed the results of a depth survey made through Professional Research Analysts, the research division of Jordan, Sieber and Corbett, Inc., and he also repeated verbatim the replies he received from the following persons: Dan Rennick, Editor, and Robert O'Malley, Publisher, of *American Druggist;* Dr. John Dargavel, General Manager of the National Association of Retail Druggists; Louis Kazin, Associate Editor of *Drug Topics;* Dr. Eric W. Martin, Editor of THIS JOURNAL; Robert Abrams, Executive Secretary of the American College of Apothecaries; Peter Sletterdahl, Editor of the *NARD Journal;* and Dr. Madeline O. Holland, Editor of the *American Professional Pharmacist.*

When a new prescription item is introduced here is what the practicing pharmacist wants to know:

1. Product and manufacturer's name
2. Technical information (chemical nature, mechanism of action, therapeutic indications)
3. Dosage schedules
4. Contraindications, side effects
5. Evidence of promotion to physicians
6. Pricing information
7. Product availability (direct, wholesaler)
8. Packaging information

PMA Ethical Promotion

A renewed pledge of adherence to highest standards in ethical pharmaceutical promotion to the physician was announced recently as one of the first significant actions of the newly formed Pharmaceutical Manufacturers' Association.

The statement of principles involves ethical pharmaceutical products which are promoted only to the medical and allied professions and does not concern proprietary medications advertised directly to the public.

In essence, it calls for acceptable scientific evidence before promotional material is released, for faithful reporting of clinical tests, for medical review of all claims, and for distribution of full information to the profession before news is released to the lay public.

George F. Smith, President of Johnson & Johnson, New Brunswick, N.J., is the first president of the PMA. President-elect is William B. Graham, President of Baxter Laboratories, Inc., Morton Grove, Illinois.

The text of the statement follows:

"We, members of the Pharmaceutical Manufacturers' Association, recognizing our responsibilities and obligations to promote the public welfare and to maintain honorable, fair and friendly relations with the medical profession, with associated sciences, and with the public, do pledge ourselves to the following statement of principles:

"1—Prompt, complete, conservative and accurate information concerning therapeutic agents shall be made available to the medical profession.

"2—Any statement involved in product promotional communications must be supported by adequate and acceptable scientific evidence. Claims must not be stronger than such evidence warrants. Every effort must be made to avoid ambiguity and implied endorsement. Whenever market, statistical, or background information or references to unpublished literature or observations are used in promotional literature, the source must be available to the physician upon request.

"3—Quotations from the medical literature or from the personal communications of clinical investigators in promotional communications must not change or distort the true meaning of the author.

"4—If it is necessary to include comparisons of drugs in promotional communications, such comparisons must be used only when they are constructive to the physician and made on a sound, professional and factual basis. Trademarks are private property that can be used legally only by or with the consent of owners of trademarks.

"5—The release to the lay public of information on the clinical use of a new drug or a new use of an established drug prior to adequate clinical acceptance and presentation to the medical profession is not in the best interests of the medical profession or the layman.

"6—All medical claims and assertions contained in promotional communications should have medical review prior to their release.

"7—Any violation of these principles brought to the attention of the president of the Pharmaceutical Manufacturers' Association shall be referred by him to the Board of Directors."

According to the interpretation of the legal staff of the Pharmaceutical Manufacturers' Association, the words "medical profession" as used in the above statement of principles refers not only to medical practitioners but also to pharmacists, nurses, dentists, and other members of the health team.

White House Conference on Children and Youth

The White House has made public the following letter from the President to the Honorable Marion B. Folsom, the Secretary of Health, Education, and Welfare:

THE WHITE HOUSE

May 27, 1958

Dear Marion:

Every ten years during this century there has been a White House Conference concerned with the Nation's children and youth. The first such conference, called by President Theodore Roosevelt, was held in 1909. These conferences have contributed much to our present recognition of the importance of children and youth and their full development to our national future.

A new decade will soon begin, and I am, therefore, directing that a sixth White House Conference on Children and Youth be held in March 1960. The rapidly changing times in which we live, and the increasingly fast pace of change, make it incumbent upon us to do everything we can to plan ahead and to see that we prepare today's children well for life in tomorrow's world.

I should like the Department of Health, Education, and Welfare to take the lead in the preparatory work for this conference. It is my desire that all private and public groups and organizations concerned with this field have maximum opportunity to participate. The main responsibility for public action in this area must, of course, rest with the States and local governments. Accordingly, at the earliest time, you should invite the Governors to participate actively at all stages, along with local officials from their States.

Selection of the theme of the conference, as well as the responsibility for its direction, will

Continued on page 432

Letters

Aspirin Elixir

Sir:

Professor Elsa Ehrenstein's remarks in the May issue about the Aspirin Elixir, which was published by two of my former students and myself in the January issue, are quite appreciated. I would like to point out, however, that we were quite cognizant of the need for improving the palatability of our formula and stated so in the last paragraph of the article. It was also stated that the formula was developed primarily for administration to children and infants, whose palates react quite unlike those of adults. My own children liked the preparation, which was given to them chilled. Improvements in taste were obtained by replacing PEG 400 with PEG 600 and PEG 1000. Of the volatile oils, anise has a stronger masking effect than the originally suggested orange flavor.

It is easy to obscure the main purpose of the elixir with objections to minor points. There is a need for a liquid, fairly stable aspirin preparation, and this was the first time that such a formula, substantiated by data on stability, has been published. It was meant to be used for the administration of aspirin alone, not to serve as a vehicle for a multiplicity of drugs. The addition of potassium citrate to a liquid aspirin preparation is unsound since at the pH of a potassium citrate solution (about 8.5) aspirin rapidly hydrolyses.

I believe the readers of THIS JOURNAL would have been better served if the original authors of the paper had been given the opportunity to have their reply published together with Professor Ehrenstein's letter. This is the custom in most journals and you are undoubtedly aware of it.

T. Werner Schwarz,
Assistant Professor of Pharmacy
University of California
San Francisco, Calif.

Army Pharmacist

Sir:

I know of several cases on this installation where graduate pharmacists have no connection with the profession during their military service. . . Certainly, if one such case exists there are many similar ones.

Most young men that I know have no intention of shirking their responsibility of military service. Yet the misuse of manpower occurs over and over again throughout the Army. This can only lead such persons to believe their two or three years of service is a waste of time, and, consequently, leave them with a feeling of apathy, even disrespect, for the Armed Services.

Robert J. Needham
Fort Polk, La.

Membership Certificates

Editor's Note: The permanent membership certificate of the AMERICAN PHARMACEUTICAL ASSOCIATION, which was described on page 75 of the February 1958 Issue of THIS JOURNAL, is being distributed to all active members as their dues for the current year are being paid. Hundreds of complimentary comments have been received from our members of which the following are typical:

"Most professional looking. Will look good along side my Pharmacy license."

Harold L. Fish
51 West Mosholu Parkway N.
Bronx 67, New York

"The APhA has done a fine job on the permanent certificate. I am very pleased with it."

George J. Kalinowski
66 Mills St.
Bristol, Conn.

"Outstanding in its design and simplicity."

Carl W. Rodewig
99 Edgington Lane
Wheeling, West Va.

"Thanks for the beautiful certificate which I am having placed in the crystal-clear plastic, after which it will be displayed with pride."

Z. B. Johnston
Brookneal, Virginia

"Very creditable; will be proud to display."

Owen T. Baker
2707 Firtree Ct.
Cincinnati 23, Ohio

"I appreciate the certificate and enjoy the Journals."

Joel A. French, Jr.
103 N. Penn
Independence, Kansas

"Please accept my sincere thanks for the opportunity you are affording me to display my APhA membership."

Robert S. Scarbough, Jr.
Texas Southern Univ.
Houston 4, Texas

"It is the most beautiful certificate that I have seen EVER."

C. I. Hyatt
2807 San Jacinto
Austin 5, Texas

"Very professional looking diploma I am having it framed."

Dan B. Costello
5318 Manila Avenue
Oakland, Calif.

"Very impressive."

Wayne H. Dunlap
214 Magnolia
Hubbard, Texas

"The new certificate is a dignified one which we will proudly display. Thanks."

Julius Segal
1901 Delaware Ave.
Wilmington, Delaware

"Think this is a great idea and will save printing each year. Beautiful certificate worthy of framing."

William E. McCorkle, Jr.
725 Norman Rd.
York, Pa.

"A job well done! Congratulations."

John J. Watt, Jr.
819 E.N. Grand Avenue
Springfield, Ill.

"Permanent certificate is an excellent idea, fine appearance and a good professional advancement."

A. Julian Scarani
R. 5, Panther Road
Vineland, N.J.

"Thank you very much. I shall be very proud to frame it and have it in my U.C. office."

J. Leon Lichtin
4298 Minmor Drive
Cincinnati 17, Ohio

"Very attractive and impressive."

Virginia H. Ruszel
10315 S. Calhoun Avenue
Chicago 17, Ill.

"Like it *very* much."

M. Patricia Moredock
726 Nuttman
Fort Wayne, Indiana

"Congratulations!"

Joseph G. Oliver
820 Franklin
Grenada, Miss.

"Surely the new permanent certificate, the "Second Century Builder" seal and the plaque service will make each and every member realize the importance of being a member of the finest association of the United States of America."

Limous H. Cruce
5112 Gary Ave.
Fairfield, Ala.

Editorial

Redefine Pharmacy

The last 100 years has witnessed startling transformations in the profession of Pharmacy. In 1958 it no longer even remotely resembles what it was in 1858.

A century ago Pharmacy consisted of a few drug importers and suppliers plus a few thousand independent pharmacies scattered across this continent. The western areas of the United States and Canada were just being settled. In fact, the first pharmacy in the whole Province of British Columbia, which this year is celebrating the 100th Anniversary of its founding, had just been opened.

Pharmacy in 1858

In 1858 each pharmacist was his own educator by means of the apprenticeship system. Each pharmacist was his own manufacturer, as well as his own personal distributor. He also largely governed his own professional actions through early codes of ethics, such as the one developed by The American Pharmaceutical Association when it was founded in 1852. Surrounded by his pill tiles, mortars, pestles, herbs, barks, seeds, roots, and other vegetable products, the pharmacist was steeped in the lore of the herbalist. He did compound and dispense some mineral and a few peculiar animal products, but for the most part he prepared plasters, pills, tinctures, extracts, and other poorly standardized galenicals, employing a great deal of art and very little science.

Pharmacy in 1958

Now what has happened to Pharmacy during the last 100 years? Let us look at each major facet in turn.

Education—Instead of individual instruction of apprentices, we now have college curricula. Pharmaceutical education has become one of the large segments of our profession. No longer do we have knowledge transmitted from one generation to the next through the trade type of practical experience and verbal instruction passed along from preceptor to apprentice who in turn becomes a preceptor. We now have a national network of 76 accredited colleges of pharmacy meeting high educational standards. In these colleges some 1,000 professors and associates constantly enlighten 17,000 students and turn out 4,000 highly qualified, scientifically educated graduates each year.

Industry—Instead of individual pharmacists crudely preparing plant extracts, pills, suppositories, and other products by hand, a great industrial segment of Pharmacy has arisen. It currently consists of some 1,400 manufacturers of drugs, staffed with more than 100,000 employees, mass producing about $3,500,000,000 worth of drug products annually. Automatic mass production has almost entirely replaced the compounding of individual prescriptions by hand. Specialization of manpower in research, development, production, and promotion activities plus accurate control now yields hundreds of new potent, pure, specific, and stable drugs annually.

Distribution—Instead of a few independent pharmacies scattered across the country, we now have a gigantic distribution network selling $7,000,000,000 worth of products annually and dispensing over 2,000,000 prescriptions a day. This network consists of nearly 3,000 wholesale drug outlets; 53,000 retail pharmacies, about 8,000 of which are members of drug chains; and nearly 4,000 hospital pharmacies manned by nearly 5,000 full-time pharmacists in the 7,000 hospitals of our Nation. Licensed practicing pharmacists now total well over 100,000.

Government—Instead of a few pharmacists in the Army, Navy, and Public Health Service, we now find thousands of pharmacists employed by the Government in the Public Health Service, the Food and Drug Administration, the Veterans Administration, the Army, the Navy, the Air Force, and other Government agencies. Pharmacists in government service are proudly making real contributions to public health as they serve the state directly.

This then is Pharmacy as we know it today, a vast and complex industry with many large and important segments in the fields of education, manufacturing, distribution, and government. These segments in turn are supported by many auxiliary groups such as the national, state, regional, and local associations. Total manpower is approximately 250,000.

New Concept of Pharmacy

Once characterized by galenicals, empiricism, and the trade school type of philosophy, we have advanced to the era of specific and standardized medication, developed on the basis of scientifically designed experiments. The era of the spatula and the mortar and pestle has yielded to an age of electronically controlled machinery mass producing drugs on a scale never dreamed of just a few decades ago.

As we slowly begin to appreciate the vast changes which have taken place in our profession, we discover that the need for redefining Pharmacy becomes more urgent each day that passes. How can we ourselves appreciate, or effectively explain to others, how essential our profession is if we don't have a modern, concisely stated definition? We must make crystal clear to everyone concerned our responsibilities and operations in the art and science as well as the business and profession of educating pharmacists and of manufacturing and distributing drugs.

We must redefine Pharmacy in the framework of its broader concepts to clarify our vital position in society as a well integrated, unified industrial-professional complex.

Eric W. Martin

STRAIGHT FROM Headquarters

rt P. Fischelis,
Secretary

Welcome to the Class of 1958

Pharmacy college commencements are over, and upward of 3,500 graduates of the 76 accredited colleges of pharmacy in the United States are in the process of being integrated into the profession. Of these, more than 2,000 have already joined the AMERICAN PHARMACEUTICAL ASSOCIATION as active members under the three-year program which the Council has offered student branch members of the APhA.

We extend a hearty welcome to all graduates of colleges of pharmacy as they enter upon their professional careers, and we particularly welcome those who have elected to join the AMERICAN PHARMACEUTICAL ASSOCIATION as active members. We urge them to take full advantage of such membership.

There is really only one way in which a pharmacist can be publicly recorded as belonging to his profession, other than to be listed as a registered pharmacist in the records of the state board of pharmacy which granted him a license to practice. This is through membership in Pharmacy's only national professional society which publishes the record of its members biennially in what has become popularly known as the profession's "Who's Who" in American Pharmacy.

Since 1852 the best identification of acceptance as a professional person in the field of Pharmacy has been the display of a certificate of membership in the AMERICAN PHARMACEUTICAL ASSOCIATION and authority to carry the pocket card certifying to active membership.

The administrative officers of pharmaceutical manufacturing organizations, deans of colleges of pharmacy, and owners of pharmacies who are in need of personnel are giving more and more weight to a candidate's affiliation with professional societies in judging applicants for important positions.

Holding membership in the AMERICAN PHARMACEUTICAL ASSOCIATION identifies a pharmacist as one who is interested in keeping himself abreast of the affairs of the profession by constant and careful perusal of the publications of the ASSOCIATION and the part he takes in the programs of local and national associations.

If there is any single factor that counts more than another in evaluating the progressive interest of a newcomer in the field of his chosen endeavor, it is the indication that he desires to continue his education in the special field for which he has been trained.

As we extend congratulations and best wishes to the graduating classes of colleges of pharmacy in this eventful year, we offer the services of the AMERICAN PHARMACEUTICAL ASSOCIATION to each member in acquiring and maintaining that professional standing which will be one of the greatest assets of his or her career.

Today, the pharmacist is no longer an isolated specialist concerned with the manufacture and dispensing of the prescriptions of medical practitioners in his own shop. He is rather a public servant in the sense that the hundreds of persons visiting his pharmacy or contacting him in the hospitals, clinics, and manufacturing plants where he may be working seek him out as a source of information.

They expect from the modern pharmacist not only his drug-dispensing services, but also his advice on community and personal health problems. The broad contacts which the successful pharmacist must maintain with our voluntary health organizations, state and private health agencies, and community affairs in general can be fostered best by maintaining contact with the AMERICAN PHARMACEUTICAL ASSOCIATION, which has established a close liaison with all private and governmental agencies that deal with health problems.

Distinguished and Faithful Service

Each year the terms of three elected members of the Council expire and they either succeed themselves or are replaced by new members who have been elected by mail ballot submitted to the entire active membership of the ASSOCIATION. The By-laws provide that after a member of the Council has served two three-year terms he may not serve a third term until at least one ASSOCIATION year has passed.

The three elected members whose terms expired at the 1958 Convention were Dr. H. A. B. Dunning, Louis J. Fischl, and Henry H. Gregg.

Mr. Fischl was elected President of the Association and now serves as a member of the Council by virtue of his office. Both Dr. Dunning and Mr. Gregg had served on the Council for long periods. At the Los Angeles Convention their most recent two consecutive three-year terms expired, hence they were not eligible for re-election to succeed themselves in 1958–59 and new members took their places at the organization meeting of the Council held on Saturday, April 26.

The retirement of Dr. H. A. B. Dunning and Henry H. Gregg as elected members of the Council at this time

marks the completion of a period of unusually distinguished and faithful service to the ASSOCIATION by two highly esteemed practicing pharmacists.

Dr. Dunning has retired from active duty but is enjoying his retirement by continuing to act as a valued adviser in many association and public affairs to which he has devoted much of his time over many years. He is Chairman of the Board of Hynson, Westcott and Dunning and thus retains a very active interest in the successful manufacturing enterprise with which he has been associated for so many years. The AMERICAN PHARMACEUTICAL ASSOCIATION has honored Dr. Dunning in many ways and dedicated its October 1957 Special Education Issue of THIS JOURNAL to him.

Henry H. Gregg is a practicing pharmacist in Minneapolis whose devoted service to the AMERICAN PHARMACEUTICAL ASSOCIATION has been outstanding over a long period. He served as Vice President in 1940–41; as Chairman of the House of Delegates in 1941–42; and as President in 1950–51. During his long service as a member of the Council, which dates back to 1940, he served on many committees but his major activity was that of Chairman of the Committee on Finance.

Mr. Gregg has brought to the thinking and actions of the Council the viewpoint of the practicing pharmacist and the common sense of the independent pharmacy owner who specializes in prescription practice and is close to the reactions of the public.

Fortunately both Mr. Gregg and Dr. Dunning will continue to be available for advice and counsel in the future.

Surgeon General Burney Honored

The Eleventh World Health Assembly which concluded its three weeks' session in Minneapolis on June 13, elected Dr. Leroy E. Burney, Surgeon General of the U. S. Public Health Service, as its President for the ensuing year. Dr. Burney presided over the Assembly which, in his own terms, was "a noteworthy one." He characterized the Assembly as one in which friendship, a warm understanding of each other's position, and a true spirit of harmony had been paramount.

In his opening address to the Assembly, Dr. Burney stated, "We can look at the past with great pride; we look to the future with great anticipation. We can meet the challenges of the present and future by working together—WHO, all nations, organizations, and individuals."

The discussions and actions taken by the Assembly included moving malaria eradication programs into high gear; calling for more emphasis on health research, toward which program the U.S.A. contributed a special fund of $300,000; a comprehensive WHO program to deal with health implications in the peaceful uses of atomic energy — a U.S.S.R. proposal supported by the U.S.A. and twenty-one other countries which adopted the program unanimously; steps taken toward a global smallpox eradication program; the launching of a new field referred to as "sports medicine."

The Assembly adopted a 1959 public health program which includes some 800 projects in nearly every country and territory in the world. To finance this work in 1959, the Assembly adopted its largest budget to date, amounting to $14,287,600. The health program of WHO is being oriented more than ever toward the primary objective of strengthening national public health services.

As presiding officer of the Assembly, Dr. Burney conferred the Leon Bernard Foundation award on Dr. Thomas Parran, a former Surgeon General of the U. S. Public Health Service, for outstanding contributions in the development of that service, particularly in expanding national control programs against venereal diseases, tuberculosis, and cancer, and for his promotion of large-scale hospital construction throughout the United States. Dr. Parran presided over the International Health Conference in New York 10 years ago, which brought WHO into being.

The Assembly devoted the first two days of its session to a Tenth Anniversary Commemorative Ceremony, at which Dr. Milton Eisenhower, President of Johns Hopkins University, greeted the Assembly on behalf of the President of the United States. The next Assembly will meet in 1959 at Geneva, which is the headquarters of WHO.

A special tribute in the form of a testimonial luncheon was paid to Dr. Burney on July 1, when more than 500 persons in all walks of life gathered at the Mayflower Hotel in the City of Washington to honor him.

Dr. Burney, whose portrait appears on the cover of this issue of the Journal, has been Surgeon General of the U. S. Public Health Service since August, 1956. He was born in Indiana, December 31, 1906 and was educated at Butler University in Indianapolis, and Indiana University, where he received his M.D. degree in 1930. He served as a Rockefeller Fellow at Johns Hopkins University School of Hygiene and Public Health, receiving the M.S. degree in Public Health in 1932. His internship was served at the Marine Hospital in Chicago, and he was commissioned in the regular corps of the Public Health Service in 1932. Among his contributions and services to public health are the establishment of the first mobile venereal disease service in Brunswick, Georgia; service as assistant chief, Division of State Relations, P.H.S., Washington, D.C.; service with the Navy in connection with venereal disease control in various Mediterranean ports during World War II; service as Director of District No. 4, P.H.S., New Orleans; Commissioner of Health of the State of Indiana on detail from the Public Health Service, 1945 to 1954; Assistant Surgeon General and Deputy Chief of the Bureau of State Services P.H.S., just prior to his appointment as Surgeon General. He holds membership in numerous medical and public health organizations, and has received honorary degrees from Jefferson Medical College, Philadelphia, and Seton Hall University, New Jersey.

Dr. Burney has demonstrated his great capacity for administration of health services and is well versed in the programs and problems of public health as they pertain to the field of Pharmacy. We are pleased to add our congratulations and best wishes to the many which have come to him on his distinguished leadership in public health affairs, both in the United States and internationally.

An evaluation of **thixcin**

in preparing a series of new ointment bases

by Joseph F. Gallelli, Robert Bloom, Arnold Urdang, Harold I. Silverman, and Lyman D. Fonda

A new thixotropic agent which swells to form a gel structure when properly dispersed in a suitable nonaqueous medium, Thixcin®[1], a modified 1-hydroxystearin, has the property of thickening oils to a consistency which can be employed as ointment bases.

This investigation was planned to explore the possibility of employing Thixcin in preparing a series of bases which could be used as dermatological vehicles for various medicaments. One of the advantages of this product is that the concentration can be adjusted to obtain a vehicle of any desired consistency.

Toxicity studies have been conducted by the manufacturer, and the released information indicates inertness both from the standpoint of dermatology and acute toxicity.[2]

Experimental

A total of 6 bases were prepared using 4 fixed oils, heavy liquid petrolatum, and polyethylene glycol 400. Two bases were prepared from each oil, one being of a creamy consistency, similar to 2% carboxymethylcellulose, and the other comparable to the stiffness exhibited by petrolatum, USP.

The bases were prepared by dispersing the calculated amount of Thixcin in the oil with the aid of a high speed mixer. It was found that the gelling effect of Thixcin varies according to the type of material employed as well as the speed of mixing. In this investigation an Eppenbach Homo-Mixer, Model 1-L, was used at 8000 r.p.m. until the Thixcin was homogeneously distributed. After the Thixcin was added, the mixtures were allowed to stand for varying periods of time (Table I) for the oils to solidify to the point where they could be employed.

Table I—Approximate Time Necessary for Bases to Acquire Proper Consistency

Oil	Concentration of Thixcin	Approximate Time in Hours
Cottonseed	5[a]	24
	7	48
Linseed	5	48
	7	48
Expressed almond	3	24
	7	24
Castor	3	24
	5	24
Heavy liquid petrolatum	7	48
	10	48
Polyethylene glycol 400	5	48
	7	48

[a] Per cent, w/w.

* Contribution from the Pharmacy Department of Brooklyn College of Pharmacy, Long Island University.

[1] Kindly furnished by The Baker Castor Oil Company, 120 Broadway, New York 5, N. Y.

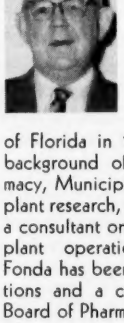
[2] Application News Letter No. 20, May 12, 1955, The Baker Castor Oil Company, 120 Broadway, New York 5, N. Y.

JOSEPH F. GALLELLI, a registered pharmacist in the State of New York, received his B.S. degree in Pharmacy from the Brooklyn College of Pharmacy, Long Island University, in 1957. Mr. Gallelli is presently a graduate student at Temple University, where he is studying for the Master degree.

ROBERT BLOOM, a Registered Pharmacist in the State of New York, received his B.S. degree in Pharmacy from the Brooklyn College of Pharmacy, Long Island University, in 1957. Mr. Bloom is a member of Rho Chi and is presently a practicing retail pharmacist.

DR. ARNOLD URDANG, Assistant Professor of Pharmacy at Brooklyn College of Pharmacy, Long Island University, received his B.S. degree from the same school, his M.S. from Columbia University, and his Ph.D. degree from the University of Connecticut in 1955. In addition to teaching a course in Physical Pharmacy, Dr. Urdang is conducting research in organic synthesis for which he has received a grant from the Research Corporation.

DR. HAROLD I. SILVERMAN, Assistant Professor of Pharmacy at Brooklyn College of Pharmacy, Long Island University, received his B.Sc., M.Sc., and D.Sc. degrees from the Philadelphia College of Pharmacy and Science, where he taught pharmacognosy for several years before going to Long Island University. In 1956 he was a recipient of the Edwin Leigh Newcomb Memorial Award for research in pharmacognosy. Dr. Silverman's present research activities are concerned primarily with phytochemistry.



LYMAN D. FONDA, Professor of Pharmacy and Chairman of the Pharmacy Department at Brooklyn College of Pharmacy, received his Ph.G. and B.Sc. degrees from Purdue University in 1923 and his M.Sc. from the University of Florida in 1927. He has an extensive background of experience in retail pharmacy, Municiple Board of Health functions, plant research, pilot plant supervision, and as a consultant on problems of formulation and plant operational procedures. Professor Fonda has been a delegate to USP Conventions and a consultant to the N.Y. State Board of Pharmacy.

Preliminary experiments indicated that the amount of Thixcin necessary to attain the desired base ranged from 3% to 10%. The concentration necessary for each oil used and the degree of stiffness obtained is included in Table II.

The six bases were used to prepare a series of fifteen ointments of typical active ingredients incorporated into ointment preparations. These ointments were prepared by levigating the medicament with a small amount of the base until a smooth paste resulted and then incorporating the remainder of the vehicle. The finished products were stored at room temperature and at 38°C. for 35 days. At the end of the storage period, the ointments were observed by spreading them on a glass slab and on the back of the hand. The relative consistency of the samples which were stored in the oven were compared with the respective samples stored at room temperature. The results of these studies are shown in Table III.

Discussion

The ointments prepared have been divided into 4 groups for convenience in presenting the results of the above observations. The first group contains those ointments which were satisfactory and that did not exhibit any change during or at the end of the storage period both at room and elevated temperatures. The second group consists of those preparations which exhibited good spreading qualities and ease of application but showed a color change at the end of the storage period at elevated temperature. Those ointments whose color changed at room temperature as well as 38°C. were included in group three. Other than the color change indicated, the preparations in groups two and three were quite satisfactory. Group four contains those ointments which exhibited an incompatibility and can be considered to be unsatisfactory.

Incorporation of the active ingredients into the various bases was readily accomplished without encountering any difficulty except in the case of Peruvian balsam. Peruvian balsam was incompatible with the bases prepared from polyethylene glycol 400 and cottonseed oil as evidenced by a preparation that was stringy in appearance. The ointments containing coal tar did not yield a homogeneous preparation; separation occurred with the resulting product having a slightly speckled appearance. The ephedrine sulfate and resorcin ointments required prolonged levigation before a smooth preparation could be obtained.

All the ointment bases exhibited a certain degree of thixotropy. This was apparent during the incorporation of the active medicaments into the various bases. However, it should be pointed out that the original consistency was restored upon standing.

Little change in consistency was noticed over the 35-day observation period.

The ointments prepared from the six bases all possessed unusual ease of skin application. With the exception of the polyethylene glycol 400 vehicle, the remaining bases were not water washable and proved to be very effective as a protective ointment. It was possible to convert these bases into vehicles which were water-washable by incorporating a surface active agent into the oil before the Thixcin was added. It was found that a concentration of 5% Sipex TEA®[3] was sufficient to produce a base which could be removed readily with water. The addition of this surface active agent did not have any effect on the gelling properties of Thixcin.

As indicated in Table III, a number of products showed discoloration. In all cases where this occurred, the samples stored at 38°C. showed a greater intensity of color. As reported in other investigations[4], ammoniated mercury and resorcinol were the medicaments which gave the most discolorations. ■

Summary

1. Thixcin® is capable, when dispersed with various oils, of producing products of ointment-like consistency.
2. Resorcinol and ammoniated mercury, each by itself or combined, showed more discolorations with all the ointment bases than any other ingredient or combination of ingredients used.
3. The bases produced with Thixcin showed a wide range of stability with the medicaments tried.

Table II—Concentration of Thixcin Necessary to Obtain Preparations of Ointment-like Consistency

Concentration of Thixcin Used	Cottonseed Oil	Expressed Almond Oil	Linseed Oil	Castor Oil	Heavy Liquid Petrolatum	P.E.G. 400
1+	L	L	L	L	L	L
3	SS	C[a]	SS	C[a]	L	SS
5	C[a]	S	C[a]	ST[a]	SS	C[a]
7	ST[a]	ST[a]	ST[a]	—	C[a]	ST[a]
9	—	—	—	—	S	—
10	—	—	—	—	ST[a]	—

[a] Concentration used for further study.
L = Liquid; C = Cream; SS = Semi-solid; ST = Stiff.
+ Per cent, w/w

[3] Available from American Alcolac Corporation, 3440 Fairfield Rd., Baltimore 26, Md.

[4] Saute, R. E., and Lee, C. O., THIS JOURNAL 15, 39 (1954).

Table III—Classification of Ointment Ingredients

Active Ingredient	Cottonseed Oil		Expressed Almond Oil		Linseed Oil		Castor Oil		Heavy Liquid Petrolatum		P.E.G. 400	
	5[a]	7	3	7	5	7	3	5	7	10	5	7
Ammoniated mercury 5%	1	1	1	1	2	2	3	3	1	1	2	2
Ammoniated mercury 5% Resorcin 5%	3	3	3	3	3	3	3	3	3	3	3	3
Benzoic acid 3% Salicylic acid 3%	1	1	1	3	1	1	3	3	3	1	1	1
Cade oil 5%	1	1	1	1	1	1	1	1	1	1	1	1
Coal tar 5%	1	1	3	1	1	1	3	1	1	1	1	1
Coal tar solution 5%	1	1	1	1	1	1	1	1	1	1	1	1
Coal tar solution 10%	1	1	1	1	2	2	1	1	1	1	1	1
Ephedrine sulfate 1%	1	1	1	1	1	1	1	1	1	1	1	1
Ichthammol 15%	1	1	1	1	1	1	1	1	1	1	1	1
Liquified phenol 2%	1	1	1	1	1	1	3	3	1	1	1	1
Resorcin 3%	2	2	3	3	2	2	3	3	3	3	2	2
Salicylic acid 3%	1	1	1	1	1	1	3	3	1	1	1	1
Precipitated sulfur 10%	1	1	1	1	1	1	1	1	1	1	1	1
Vioform 3%	1	1	1	1	1	2	1	1	1	1	1	1
Peruvian balsam 10%	4	4	1	1	1	1	1	1	4	4	4	4

[a] Conc. of Thixcin w/w.
Group 1—Satisfactory; Group 2—Satisfactory except for color change in oven sample; Group 3—Satisfactory except color change was observed in samples at room temperature as well as oven samples; Group 4—Unsatisfactory due to incompatibility.

Complete text of the

APhA Resolutions

and recommendations approved at the Los Angeles Convention of the American Pharmaceutical Association April 20-26, 1958

THE RESOLUTIONS passed by the House of Delegates of the AMERICAN PHARMACEUTICAL ASSOCIATION at the Los Angeles Convention on April 25 and endorsed by the ASSOCIATION at its final general session on the same day, were transmitted for implementation to the Council of the ASSOCIATION at its meeting held the following day.

These resolutions resulted from recommendations from the officers of the ASSOCIATION in their respective addresses or reports; the recommendations proposed by various committees in their annual reports; proposals offered by members of the House of Delegates from the organizations which they represent; and from recommendations or resolutions proposed by individual delegates.

All of the resolutions were given careful consideration by the Committee on Resolutions which held a number of meetings during the convention week.

The Committee on Resolutions was headed by John J. Debus of New Jersey, Chairman, and included George E. Crossen, Oregon; Louis J. Fischl, California; Henry H. Gregg, Minnesota; Nicholas S. Gesoalde, New York; Michael Perhach, New York; Linwood F. Tice, Pennsylvania; Thomas J. Vratny, Illinois; and Thomas D. Wyatt, South Carolina.

President Joseph B. Burt and Secretary Robert P. Fischelis attended the meetings of the Committee as ex-officio members. Thomas J. Vratny was absent.

The resolutions, as presented in the following paragraphs, represent the final action of the House of Delegates in each case, and action of the Council to provide for implementation of the resolutions is indicated.

APHA AFFAIRS

Student Recruitment

President Burt recommended in his presidential address that the AMERICAN PHARMACEUTICAL ASSOCIATION go on record as recognizing the important responsibility of the individual practicing pharmacist, in all segments of Pharmacy, in the recruitment of well-qualified students of pharmacy, and that the ASSOCIATION urge each of its members to lend his personal assistance to this effort in order that our future manpower requirements may be met.

The House of Delegates approved this recommendation and the Council directed the Secretary to publicize this recommendation.

WHEREAS, any profession must improve or become obsolete, and

WHEREAS, the quality of the group is determined by the quality of its individual members, be it

RESOLVED, that an effort be made to attract intelligent, industrious young people to study pharmacy and be it further

RESOLVED, that, in order to accomplish this, the vocational counselors of all high schools be furnished all pertinent information concerning the opportunities, responsibilities, and the rewards in the profession of Pharmacy.

The House of Delegates voted to refer the resolution to the American Association of Colleges of Pharmacy. The Council requested the Secretary to enlist the aid of the American Association of Colleges of Pharmacy in its implementation.

WHEREAS, Pharmacy in many cases is left off the recommended list of professions by vocational guidance directors for the top 10% of high school graduating seniors and those that show they are of college caliber and are capable of doing satisfactory college work by receiving a favorable grade on such tests as Ohio State University's Psychological Examination, be it

RESOLVED, that the AMERICAN PHARMACEUTICAL ASSOCIATION enlist

the aid of the American Foundation for Pharmaceutical Education and the companies sponsoring the booklet, "I'll Take Pharmacy," to obtain the names of these highly intelligent and qualified high school graduates for transmission to the Deans of the Colleges of Pharmacy throughout the country so that Pharmacy will be given an equal opportunity to present its case.

The House of Delegates voted to refer the resolution to the American Association of Colleges of Pharmacy. The Council requested the Secretary to enlist the aid of the American Association of Colleges of Pharmacy in its implementation.

WHEREAS, the high schools of the nation actively support Science Clubs, and

WHEREAS, the high school science teachers also have their science organizations which actively sponsor the National Science Fair, and

WHEREAS, manufacturers, clubs, organizations, and the AMA encourage these Science Fairs by awarding prizes, be it

RESOLVED that the AMERICAN PHARMACEUTICAL ASSOCIATION go on record as approving the National Science Fair and make it possible to offer a prize for the best project in the field of Pharmacy.

Since this resolution requires an expenditure of funds, the House of Delegates voted that it be referred to the Council for further consideration. The Council approved the resolution in principle and requested the Secretary to ascertain what other professional organizations are doing in this field and refer the resolution and further information to the Committee on Finance.

APhA Building Program

President Burt recommended in his presidential address that immediate steps be taken to initiate the addition of two wings to the American Institute of Pharmacy Building, planned to be acceptable to the Commission of Fine Arts.

The House of Delegates approved this recommendation and referred it to the Council. The Council considered this recommendation in connection with other resolutions and recommendations dealing with the proposed addition to the headquarters building. See below.

President Burt recommended in his presidential address that, in addition to a continued program of building fund solicitations, the House of Delegates consider authorizing an annual building fund assessment, to be continued until the total cost of the building fund program has been collected.

The House of Delegates approved this recommendation and the Council voted to bill each member in the amount of $5 for the building fund when the annual bills for dues are sent out.

Membership Promotion

President Burt recommended in his presidential address that during 1958–1959 renewed and intensified efforts be made to increase the membership of the AMERICAN PHARMACEUTICAL ASSOCIATION through the activities of state membership committees, by requesting officers and members of all regional, state, municipal, county, and local pharmaceutical associations and societies and the Local Branches of the AMERICAN PHARMACEUTICAL ASSOCIATION to assist in every way possible in this endeavor.

The House of Delegates approved this recommendation, and the Council referred the recommendation to the Committee on Membership for implementation.

President-elect Fischl recommended in his inaugural address that we should make every effort to remind nonmember pharmacists of their obligations. Sending them an invitation to join our organization is insufficient; we should employ field representatives to do a selling job—a selling job, not only on membership, but also on our aims and accomplishments. Such field representatives could also serve as organizers of local branches, arrange meetings between local medical societies and other allied professions, and pharmaceutical associations, as well as good will ambassadors for our organization.

The House of Delegates referred this recommendation to the Council for implementation. The Council reviewed the recommendation in detail and voted to communicate with the officers of the respective local branches of the Association to ascertain whether they would be willing to supervise activities of field representatives and could supply the names of individuals who might be employed to carry out this proposal.

Membership Qualifications

WHEREAS, in accordance with the present Constitution and By-Laws, it is possible for those having no professional or academic qualifications to become active members of the AMERICAN PHARMACEUTICAL ASSOCIATION, and

WHEREAS, this is inconsistent with the nature and composition of the membership of a learned professional organization and contrary to the interests of a public health profession, be it

RESOLVED, that the Committee on Constitution and By-Laws be directed to prepare and submit for action by the ASSOCIATION the necessary changes in the Constitution and By-laws that will restrict future active membership to those who are either licensed or graduate pharmacists or have an equivalent academic training in one of the physical or biologic sciences supporting Pharmacy. Those not meeting these qualifications would be made eligible, at the discretion of the Council, for an affiliate membership but could not vote or hold office. It is understood that such changes in the qualifications for membership shall not be retroactive.

The House of Delegates approved the resolution and recommended that it be referred to the Committee on Constitution and By-Laws for implementation. The Council requested the Secretary to refer the resolution to the Committee on Constitution and By-Laws.

Nomination Procedure

WHEREAS, present procedures relative to nomination of officers of the AMERICAN PHARMACEUTICAL ASSOCIATION are not specific with regard to naming additional nominees at the first session of the House of Delegates, be it

RESOLVED, that a study of this matter be made by the Committee on Constitution and By-Laws in order to effect necessary changes in Chapter II, Article I of the By-Laws of the Association.

The House of Delegates approved the resolution. The Council referred the resolution to the Committee on Constitution and By-Laws for action.

APhA Branch Affairs

RESOLVED, that a Secretaries' Commission be created within the national organization to aid secretaries of local branches in solving problems concerned with building up local branches and organizational problems existing within the branches.

The House of Delegates approved this proposal in principle and recommended that it be referred to the Committee on Local Branches for further study. The Council requested the Secretary to refer the resolution to the Committee on Local Branches.

RESOLVED, that, in addition to the current section devoted to Student Branch news in the PRACTICAL PHARMACY EDITION of the *Journal of the American Pharmaceutical Association*, one or two additional pages be allocated to contributions by students on subjects of national interest concerning Pharmacy and public health.

The House of Delegates recommended that this resolution be referred to the Committee on Publications of the Council of the American Pharmaceutical Association. The Council referred the resolution to the Committee on Publications for action.

RESOLVED, that a Certificate of Merit be presented at each annual meeting of the Student Section to those Student Branches in which 100% of the graduating class has indicated participation in the Three-Year Membership Plan and be it further

RESOLVED, that the Faculty Adviser of each Student Branch so qualifying shall receive a letter of commendation signed by the President and the Secretary of the Association.

The House of Delegates approved the resolution. The Council requested the Secretary to take the necessary steps to implement this resolution.

APhA Committee Lists

RESOLVED, that the Secretary of the AMERICAN PHARMACEUTICAL ASSOCIATION inform all members of the Association, through the JOURNAL or by some other method, of the names and addresses of all members of standing and special committees of the ASSOCIATION and the House of Delegates.

The House of Delegates approved the resolution and recommended that it be referred to the Secretary of the American Pharmaceutical Association for such action as may be required. The Council referred the resolution to the Secretary for action.

Time of Meeting

RESOLVED, that the Council of the AMERICAN PHARMACEUTICAL ASSOCIATION reconsider the question of the time of holding the annual convention and further consider the holding of the convention in the late summer or early fall to the end that it may be possible for more college men and teachers as well as State Association officials to attend the convention, for, under the present plan of holding the annual convention in the spring, school officials are busy with school matters and State Association officials, especially secretaries and members of legislative committees, are busy with legislative matters affecting their respective states.

The House of Delegates referred the resolution to the Committee on Place of Meeting for further study. The Council requested the Secretary to refer the resolution to the Committee on Place of Meeting with the request that it submit its report on the resolution to the Council as soon as possible.

LEGISLATIVE MATTERS

Medicare Program

Several resolutions were submitted to the House of Delegates dealing with the Medicare Program. The Committee on Resolutions selected the resolution submitted by the Arizona Pharmaceutical Association reading as follows:

WHEREAS, the payment to pharmacies for medicare prescriptions is not in keeping with established practices, and results in hardships and injustices to pharmacies, and

WHEREAS, this procedure can only be changed by changing the law pertaining to medicare, now, therefore, be it

RESOLVED, that the AMERICAN PHARMACEUTICAL ASSOCIATION here assembled inform Congress that we strongly urge that changes be made in laws pertaining to medicare, to enable direct payments to pharmacies for medicare prescriptions.

The House of Delegates approved the resolution. The Council requested the Secretary to transmit the resolution to General Robinson, the Director of the Medicare program, and inform him that legislation on this subject will be sought unless it is possible to work out a method of direct payment of pharmacists for their prescription and other pharmaceutical service under the present law and regulations.

Fair Trade

President-elect Fischl recommended in his inaugural address that we continue to cooperate fully, both individually and collectively, toward the passage of a national Fair Trade Act as proposed by the NARD. In addition, we should go on record again in support of the so-called Equality of Opportunity Bill. The passage of these important and essential measures will require the whole-hearted support of everyone in the drug industry.

The House of Delgates approved the recommendation and submitted separate resolutions to cover the recommendations The Council requested the Secretary to arrange for implementation of this recommendation and the resolutions emanating from it.

WHEREAS, the principle of Fair Trade has been effective in conferring to the marketing of many products a stability of markets which is in fact and in practice in the best interests of the public, and

WHEREAS, there is currently pending in the Congress a bill to amend the Federal Trade Commission Act to equalize rights in the distribution of identified merchandise (H.R. 10527) which would tend to help insure such stability of markets, be it

RESOLVED, that the AMERICAN PHARMACEUTICAL ASSOCIATION go on record as endorsing H.R. 10527.

The House of Delegates approved the resolution. The Council requested the Secretary to publicize the resolution.

Forand Bill

RESOLVED, that the AMERICAN PHARMACEUTICAL ASSOCIATION go on record as opposing the Forand Bill in its present form because it does not appear to be in the best interest of the public health and welfare.

The House of Delegates approved the resolution. The Council referred the resolution to the Committee on Legislation for appropriate action.

Jenkins-Keogh Bill

RESOLVED, that the AMERICAN PHARMACEUTICAL ASSOCIATION go on record as approving the Jenkins-Keogh Bill in principle, but strongly urges extension of the provisions of this bill to include not only self-employed persons but also persons otherwise employed who are not subject to retirement benefits under the Social Security Act.

The House of Delegates approved the resolution. The Council referred the resolution to the Committee on Legislation for appropriate action.

Sadlak-Herlong Bill

RESOLVED, that the AMERICAN PHARMACEUTICAL ASSOCIATION endorse and work for the passage of H.R. 6452 and H.R. 9119, known as the Sadlak-Herlong Bill which seeks to adjust the existing steeply progressive and highly discriminatory income tax system.

The House of Delegates referred this resolution to the Committee on Legislation for study. The Council requested the Secretary to refer the resolution to the Committee on Legislation.

Cosmetic Excise Tax

RESOLVED, that the AMERICAN PHARMACEUTICAL ASSOCIATION go on record as favoring the elimination of Federal Cosmetic Excise Taxes or transferal of such taxes to the manufacturers.

The House of Delegates approved the resolution. The Council referred the resolution to the Committee on Legislation.

S. 11 and H.R. 11

WHEREAS, the decision of the U.S. Supreme Court in the Standard Oil Case upholds the right of a manufacturer to cut prices to meet competition in alleged "good faith" and thus nullify the provisions of the Robinson-Patman Act to maintain free and honorable competition and free enterprise in the market place, and

WHEREAS, this opinion of the Supreme Court will result in the elimination of the small merchant and thus encourage monopoly through the elimination of the small merchant who cannot live in the midst of price wars and price cutting, and

WHEREAS, this entire subterfuge of "good faith" is merely a mechanism to allow and encourage such unfair competition, and

WHEREAS, S. 11 and H.R. 11 seek by Federal Legislation to eliminate the defense of "good faith," therefore be it

RESOLVED, that this House of Delegates fully endorses and supports S. 11 and H.R. 11 to the end that small merchants, especially retail drug stores, may survive and not be subject to the evils of price wars and destructive competition, and that a copy of such resolution when adopted be sent to all retail drug associations and to all members of the Congress.

The House of Delegates approved the resolution. The Council requested the Secretary to send copies of the resolution to those concerned for such action as they consider advisable.

Health Insurance

RESOLVED that the AMERICAN PHARMACEUTICAL ASSOCIATION join the American Medical Association and the American Hospital Association in their *unequivocal opposition* to any present or future legislation which would establish any type of *compulsory* health insurance.

The House of Delegates approved the resolution. The Council requested the Secretary to republish the statement opposing compulsory health insurance previously issued by the Association.

Durham-Humphrey Amendment

RESOLVED, that the AMERICAN PHARMACEUTICAL ASSOCIATION seek and work to amend the Durham-Humphrey Amendment to the Food, Drug, and Cosmetic Law to read: "A prescription can be refilled for a reasonable length of time (up to six months) unless the writer specifically states orally or on the prescription that it cannot be refilled."

The House of Delegates referred this resolution to the Committee on Legislation, in view of the fact that the Committee is now engaged in studying the Durham-Humphrey Amendment for the purpose of suggesting other changes. The Council requested the Secretary to refer this resolution to the Committee on Legislation.

Pharmacy Legislative Institute

WHEREAS, Pharmacy in America is confronted, more so than ever, with many serious and perplexing problems which require legislative consideration and activity and

WHEREAS, more and more there is a vital need for a concentrated and central plan of activity for solving and answering such problems for the best interests of professional, economic, and educational pharmacy, and

WHEREAS, there is need for a well established institution in Washington to carry on this activity both for Federal and State legislation, and

WHEREAS, the AMERICAN PHARMACEUTICAL ASSOCIATION as presently organized is unable to supply the machinery to meet the requirements of such legislative activity; therefore be it

RESOLVED, that the Council of the AMERICAN PHARMACEUTICAL ASSOCIATION proceed forthwith to consider the advisability of and machinery for setting up in Washington an independent pharmacy organization to be styled by such a name as "The Pharmacy Legislative Institute" or some similar name whose duty and responsibility it shall be to take care of all the legislative needs of Pharmacy at the Federal level to the end that Pharmacy may have a functioning institution to provide and care for all its legislative needs and protection.

The house of Delegates referred the resolution to the Council for further consideration and action. The Council requested the Secretary to obtain an opinion from the Association's attorneys as to the effect on its tax-exempt status of the establishment of such an organization, within the framework of the APhA.

DRUG DISTRIBUTION

Restrictive Sales

Chairman Gesoalde recommended in his address to the House of Delegates that all those who agree with us that potentially harmful proprietary drugs and medicines should be sold only in retail pharmacies, should get together in an all-day conference and devise the strategy to be followed in the period ahead.

The House of Delegates referred this recommendation to the committee on Legislation for implementation and action. The Council requested the Secretary to work with the Chairman of the Committee on Legislation in developing the program and details of such a conference and recommended that it be held in connection with the Interim Meeting of the House of Delegates.

Chairman Gesoalde recommended in his address to the House of Delegates that the Representatives of the APhA and the NARD withdraw from the National Drug Trade Conference committee that was assigned to make up a proposed list of drugs to be sold only under the supervision of pharmacists.

The House of Delegates voted that the American Pharmaceutical Association withdraw from further consideration of this problem by the National Drug Trade Conference in the event that the committee of the NDTC now working on this problem does not come up with a solution at the next meeting of the NDTC in December 1958. The Council discussed this matter in detail and the Secretary, who is chairman of the committee of the NDTC handling this matter, requested the Council to inform him whether it was considered in the best interest of the APhA to have him withdraw from the chairmanship of this committee. The Council unanimously requested the Secretary to continue with this project and expressed its confidence in the manner in which this difficult problem was being handled.

WHEREAS, the recent study by the National Drug Trade Conference indicated the complete lack of uniformity among the various states with respect to regulations concerning the distribution of poisonous, deleterious, and/or habit-forming drugs and medicines; and

WHEREAS, there is no question that proper safeguards for public health demand that such drugs and medicines be distributed only through duly licensed pharmacies under the supervision of pharmaceutically trained professional personnel, be it

RESOLVED, that the AMERICAN PHARMACEUTICAL ASSOCIATION take immediate action to initiate legislation to amend the Federal Food, Drug, and Cosmetic Act so as to provide that all poisonous, deleterious, and/or habit-forming drugs and medicines shall be sold only in duly registered pharmacies.

The House of Delegates decided to refer this resolution to the Committee on Legislation for consideration at the proposed all-day conference recommended by Chairman Gesoalde of the House of Delegates. The Council requested the Secretary to communicate this action to the committee on Legislation.

WHEREAS, the development and growth of new products for the relief of many diseases affecting mankind has presented many problems of adequate distribution, as has been particularly evidenced by the recently developed Salk and Asian influenza vaccines, and

WHEREAS, a tremendous crash program is presently being experienced in developing a potential cure for cancer, arteriosclerosis, and the other potential decimating diseases, and

WHEREAS, the only recognized and practical distribution system for prescription medications is by the order of a medical practitioner, through a licensed pharmacy, now therefore be it

RESOLVED, that the AMERICAN PHARMACEUTICAL ASSOCIATION in convention assembled urge all governmental agencies and officials to recognize the desirability of utilizing these established private channels of distribution for prescription medication when releasing any new preparation for public use.

The House of Delegates recommended that this resolution be referred to the Committee on Social and Economic Relations

for further study and action. The Council requested the Secretary to refer this resolution to the Committee on Social and Economic Relations.

Dispensing Aids

RESOLVED, that manufacturers of pharmaceutical specialties be urged to consider certain problems of prescription dispensers which are created because of packaging peculiarities of various manufacturers; such as the difficulty of removing labels of some specialties designed to be dispensed in original packages (ointments, ophthalmic items, etc.), and that more manufacturers be urged to use slip-labels, carton-sleeves, and other time-saving aids for prescription dispensers' convenience.

The House of Delegates voted that this resolution be made the subject of further study and that it be referred to the Committee on Social and Economic Relations. The Council requested the Secretary to refer the resolution to the Committee on Social and Economic Relations.

Legend Drug Transfer

Chairman Gesoalde recommended in his address to the House of Delegates that a permanent committee should be appointed with respect to the transfer of prescription-legend drugs to over-the-counter status to report regularly to the ASSOCIATION and its officers.

The House of Delegates approved this recommendation and recommended further that a member of the Committee on Legislation be designated to give special attention to all implications involved in the proposed transfer of legend drugs to over-the-counter status. The Council voted to request the Secretary to refer these recommendations to the Committee on Legislation for implementation.

Nonaddicting Drug Lists

President-elect Fischl recommended in his inaugural address that it would be advisable to have the FDA establish an advisory committee—as was done by the Bureau of Narcotics—to consider and recommend a list of drugs and preparations which have relatively little or no addiction probability.

The House of Delegates referred this recommendation to the Committee on Legislation for discussion with the FDA. The Council requested the Secretary to refer this resolution to the Committee on Legislation for implementation.

Revealing Rx Contents

WHEREAS, more and more each day pharmacists are directed by prescribers to write the contents of the prescription on the label, and

WHEREAS, abiding by such request, in many instances, marking the directions on the label of prescriptions makes such directions confusing, if at all understandable, and

WHEREAS, the practice can lead to self-medication with possible disastrous results, and

WHEREAS, this procedure is followed by prescribers only for their own convenience to avoid keeping records, be it

RESOLVED, that the AMERICAN PHARMACEUTICAL ASSOCIATION go on record as considering this practice not in the best interest of the public and recommend that the American Medical Association give the matter serious consideration.

The Committee on Resolutions indicated that the Association is already on record in opposition to the procedure objected to in this resolution and pointed out that steps have been taken to bring this matter forcefully to the attention of the medical profession through the AMA-APhA-NARD Liaison Committee. The House of Delegates voted to reaffirm its opposition to the procedure complained of in this resolution.

The Council requested the Secretary to confer with the Editor of the Journal of the AMA in an endeavor to have him acquaint the medical profession editorially with the objections to the procedure complained of.

Veterinary Remedy Dispensing

RESOLVED, that the AMERICAN PHARMACEUTICAL ASSOCIATION condemn the efforts to prevent qualified pharmacists from dispensing veterinary remedies because of the policy of certain manufacturers of veterinary products to restrict the supply and distribution of such products in spite of the fact that these products are being advertised through pharmaceutical publications.

The House of Delegates approved the resolution and recommended its referral to the proper Association committee for implementation. The Council requested the Secretary to publicize the resolution and refer it to the Committee on Professional Relations for action.

PROFESSIONAL RELATIONS

Proprietary Association

WHEREAS, the Proprietary Association has demonstrated its refusal to conform with the aims and objects of the AMERICAN PHARMACEUTICAL ASSOCIATION, be it

RESOLVED, that representation of the Proprietary Association in the AMERICAN PHARMACEUTICAL ASSOCIATION House of Delegates be terminated.

The House of Delegates tabled this resolution by a vote of 46 to 10. Later in the proceedings the resolution was taken from the table and was approved by the House of Delegates by a voice vote. It was pointed out in the discussion which preceded action on the resolution that representation of an association in the House of Delegates can be terminated only by an amendment to Chapter IV, Article 2 of the By-Laws striking the name of the association from the list of those entitled to such representation.

The Council requested the Secretary to refer the resolution to the Committee on Constitution and By-Laws and to transmit a copy of the resolution to the Proprietary Association informing that organization that changes in the By-Laws may be proposed at one General Session and acted upon at a subsequent General Session of the Association, in accordance with Chapter XIII. Article 1. of the By-Laws.

Joint Meetings with NARD

President-elect Fischl recommended in his inaugural address that joint meetings of the NARD Executive Committee and the AMERICAN PHARMACEUTICAL ASSOCIATION Council be reestablished for the purpose of exchange of ideas and views in order to give emphasis to the fact that these organizations are cooperating in developing harmonious professional relations.

The House of Delegates approved the recommendation and referred it to the Council with the request that it be implemented as soon as possible. The Council voted to invite the Executive Committee of the NARD to a joint meeting at a mutually convenient time.

USP and NF

RESOLVED, that the Committee on the United States Pharmacopeia be authorized to prepare an article or articles for publication in the JOURNAL OF THE AMERICAN PHARMACEUTICAL ASSOCIATION explaining the value of the *Pharmacopeia* and the *National Formulary* to the pharmacist and to the profession.

The House of Delegates approved the resolution. The Council requested the Secretary to refer the resolution to the Committee on Publications and the Editors of the Journal for action.

PUBLIC RELATIONS

Mass Media

Chairman Gesoalde recommended in his address to the House of Delegates that a Public Relations program for retail pharmacy, hospital pharmacy, and colleges of pharmacy be set up and the Committee on Resolutions urged that the Committee on Public Relations give this matter careful study.

The House of Delegates approved the recommendation. The Council requested the Secretary to ask the Committee on Public Relations to take early action on this recommendation.

In connection with the foregoing recommendation, the Committee on Resolutions also recommended to the House

of Delegates that it reiterate its expression with regard to radio, TV, and newspaper advertising. This resolution reads as follows:

RESOLVED, that the advertising of drug products by radio, TV, newspapers, or other media which tends to mislead the public or raise false hopes with regard to cure, mitigation, or prevention of disease be roundly condemned; and be it further

RESOLVED, that pharmaceutical manufacturers, pharmacists, and others indulging in advertising drug products by radio, TV, and other means of communication be cautioned to exercise due restraint in the character of their statements to the public; and be it further

RESOLVED, that unethical, untruthful, and unwarranted statements such as are frequently noted be referred to the Federal Trade Commission or other agencies having supervision over advertising; and be it further

RESOLVED, that a committee be appointed by the Chairman of the Council to review television and radio programs and newspaper and magazine advertisements with the idea of reporting abuses to the Federal Trade Commission and other interested agencies.

The Council had previously arranged for the appointment of a committee to give attention to this matter.

Misleading Advertising

RESOLVED, that the AMERICAN PHARMACEUTICAL ASSOCIATION condemn the use by advertisers of pharmaceuticals of such phrases as "buy this at your favorite drug counter" since such terms imply approval of the purchase of drugs from establishments which are not conducted under the supervision of registered pharmacists.

The House of Delegates approved the resolution and requested the Secretary to publicize it.

GOVERNMENT PHARMACY

Military Pharmacy

RESOLVED, that the AMERICAN PHARMACEUTICAL ASSOCIATION hereby reaffirms its endorsement and support of H.R. 6801, and requests the Committee on Status of Pharmacists in Government Service to continue its effort to secure passage of this measure.

The House of Delegates approved the resolution. The Council requested the Secretary to refer the resolution to the Committee on Legislation.

1:2500 Ratio

RESOLVED, that the members of Congress, the Secretary of Defense, and the Secretaries of the Army, the Navy, and the Air Force be requested to establish a ratio of one commissioned pharmacist per twenty-five hundred troop strength of the Armed Services in order to provide a level of professional pharmaceutical service to the Armed Services comparable to the standards now established in the United States Public Health Service, the Veterans Administration, and in civilian practice.

The House of Delegates approved the resolution. The Council requested the Secretary to refer the resolution to the Committee on Status of Pharmacists in Government Service.

INTERNATIONAL PHARMACY

Drugs for IRC

RESOLVED, that the AMERICAN PHARMACEUTICAL ASSOCIATION as a gesture of world good will and international public relations carry out and conduct a program of collecting drugs no longer used extensively in the United States, for distribution to various parts of the world where such useful drugs may be needed, and be it further

RESOLVED, that it make its intention known to the International Rescue Committee.

The House of Delegates, believing that further information should be obtained with respect to this resolution, recommended that it be referred to the Committee on International Relations for study and report to the Council. The Council requested the Secretary to refer the resolution to the Committee on International Relations.

APPRECIATION

RESOLVED, that the AMERICAN PHARMACEUTICAL ASSOCIATION express its appreciation to the Delegates to the Fourth Pan-American Congress of Pharmacy and Biochemistry who were instrumental in providing all the features of this successful meeting, with special thanks to the Chairman, Robert A. Hardt, and the Executive Secretary, George B. Griffenhagen, for their outstanding contributions.

The House of Delegates approved the resolution. The Council requested the Secretary to communicate the resolution to those concerned.

RESOLVED, that the Secretary of the ASSOCIATION be directed to prepare and transmit a suitable resolution of thanks to all participants in the arrangements for the Los Angeles convention and to those who made special contributions to the success of the program of the general sessions, the meetings of the House of Delegates and the Sections.

The House of Delegates approved the resolution. The Council requested the Secretary to carry out the intent of the resolution. ■

HEALTH NOTES

● Dr. Harry Johnson, Medical Director, Life Extension Examiners, says that executives by keeping their weight down have made themselves less vulnerable to heart disease, diabetes, and high blood pressure. Only 15% of executives are more than 10% above normal weight.

● *Pregnant women excrete a substance in their urine with the activity of acrasin, a chemical in slime molds that prompts the metamorphosis of these plant animals from a microscopic one-cell animal into a large and complex vegetation.*

● The Expert Committee on Addiction-producing Drugs of the World Health Organization in its 8th report recommends that the recently-developed analgesic dextromoramide (R 875), as well as a number of pethidine derivatives (morpheridine, trimeperidine and etoxeridine), should be subjected to the same control measures as apply to morphine.

● *The Committee on Toxicology of American Medical Association is continuing its efforts to have legislation for a broad model law for the precautionary labeling of hazardous substances enacted.*

● A Joint Council to Improve the Health Care of the Aged has been established by the American Dental Association, the American Hospital Association, the American Medical Association, and the American Nursing Home Association to identify and analyze the health needs, to appraise health resources, and to develop health programs for the aged.

● *The higher their education and the higher their income, the more men of the group 35–64 years of age are married and the fewer are widowed or divorced.*

● According to the National Science Foundation, the latest information just now made available indicates that 68,000 physical scientists, 139,000 engineers, and 22,000 life scientists were engaged in research and development activities in the natural sciences in 1954. Industry employed 68% of the physical scientists and 84% of the engineers, whereas more than half of the life scientists were employed in colleges and universities.

● *The first national conference of its kind on air pollution will be held in Washington, D.C., November 18–20, 1958, according to Dr. Leroy E. Burney, Surgeon General of the U.S. Public Health Service.*

Preparation and stabilization of

coconut oil emulsion

by T. W. Tober and John Autian*

ATTEMPTS to prepare a suitable emulsion of coconut oil with high caloric content when taken orally have met with several problems. The main objection has been the instability of the emulsion when certain hydrocolloids have been used as emulsifying agents[1]. Other problems encountered have been the rancidity of the oil when stored, palatability, and preservation against mold growth. In this paper a study is reported on the preparation and stabilization of a concentrated oil-in-water coconut oil emulsion. Rancidity and palatability studies are not reported here.

* Presented to the Section on Practical Pharmacy, APhA New York Convention, May 2, 1957.

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Experimental

The Use of Sorbitan Esters as Emulsifying Agents—The HLB[2] of the oil phase was determined by utilizing the methods of Griffin[3]. Samples consisting of 50%[4] of oil and 6% of total emulsifiers were prepared by hand agitation as reported for the preparation of Ethiodol emulsion[5]. The Spans[6] and Tweens[6] were utilized as the emulsifying agents. From the number of experiments conducted, the HLB of the oil was found to be approximately 9.4.

[1] Personal Communication, Clara M. Salita, A. T. Suaco & Co., Inc., Manilla, Phillipine Islands.

[2] HLB—Hydrophile-Lipophile Balance (Atlas Powder Co.).

[3] Griffin, W. C., *J. Soc. Cosmetic Chemists, 1*, 311(1949).

[4] All percentages are calculated on a weight to weight basis.

[5] Serralach, J. A., and Jones, G., *Ind. & Eng. Chem.*, Ind. Ed., *23*, 1016(1931).

[6] Products of Atlas Powder Co., Wilmington, Del.

Table I—Simple Cross Combination of Span and Tween at HLB Of 9.4

Sample	% w/w	Span	% w/w	Tween	Result of Emulsion
1	89	20	11	20	Good
2	73	40	27	20	Excellent
3	60	60	40	20	Good
4	58	80	42	20	Fair
5	43	85	57	20	Poor
6	88	20	12	40	Poor
7	70	40	30	40	Excellent
8	56	60	44	40	Good
9	54	80	46	40	Fair
10	44	85	56	40	Fair
11	85	20	15	60	Poor
12	67	40	33	60	Excellent
13	53	60	47	60	Excellent
14	52	80	48	60	Fair
15	41	85	59	60	Fair
16	87	20	13	80	Poor
17	68	40	32	80	Excellent
18	54	60	46	80	Excellent
19	52	80	48	80	Fair
20	42	85	58	80	Fair
21	64	20	36	85	Good
22	38	40	62	85	Good
23	25	60	75	85	Good
24	23	80	77	85	Excellent
25	17	85	83	85	Excellent

With the HLB value of coconut oil determined, 25 samples of emulsions were prepared with cross combinations of Spans and Tweens. These emulsions were prepared as previously described and observed for a period of 6 days at room temperature (Table I). After the sixth day, the best 8 emulsions were placed in a constant temperature oven at 50° ± 1° C. and further evaluated for a period up to 120 days. From this last experiment (Table II), it was concluded that the combination of emulsifying agents producing the best emulsion at an HLB value of 9.4 was Span 60 and Tween 60.

Determination of Minimum Concentration of Span 60-Tween 60 Combination for an HLB of 9.4—A number of oil-in-water emulsions were formulated with various total concentrations of emulsifying agents from 1% to 10%. They were prepared utilizing the Waring Blendor for 3 minutes, after which they were placed in an Eppenbach colloid mill with a constant setting and recycled for 3 minutes. The 10 samples were set aside for 48 hours at room temperature. All the emulsions below 8% concentration of emulsifying agent separated to various extents after 48 hours. The 8%, 9% and 10% emulsions were placed in a constant temperature oven at 50° ± 1° C. for 8 weeks. After the 8-week storage period, the emulsions containing the 8% and 9% emulsifying agents had separated, while there was no sign of separation in the emulsion containing 10% emulsifying agent. Even though none of the emulsions had cracked, it was concluded that the minimum quantity of emulsifying agent should not be reduced below 10% when the product was prepared as described above.

Interfacial Tension Measurements—The procedure followed to measure interfacial tension was essentially that of Serralach and Jones.[5,7] A series of samples was prepared containing 50 ml. of distilled water overlaid with 50 ml. of coconut oil. In each sample an emulsifying agent was added to the proper phase. The interfacial tension was then determined within 2 minutes after the formation of the oil/water boundary by the use of a DuNouy interfacial tensiometer. Interfacial tension measurements were conducted periodically over an 8-hour period. Each sample was stored in a constant temperature bath until a determination was to be made. The apparent interfacial tension readings taken with the tensiometer were corrected according to the methods of Zuidema and Waters.[8] (See Fig. 1).

Sucrose monostearate had the greatest effect in the concentration used while Span 60-Tween 60 combination was next in its effectiveness to reduce the interfacial tension. Acacia lowered the interfacial tension slightly while tragacanth reduced the tension to about one half that of the oil-water interface alone. Increasing the temperature for those systems containing Span 60-Tween 60 further reduced the tension between the oil and water phase.

Stability Studies of Coconut Oil Emulsion—From a number of preliminary formulations, 6 emulsions were selected for stability studies. The evaluation of stability was based on rate of creaming, dispersability, and general physical appearance. Samples were exposed to freezing, heat, and centrifugal force. Table III depicts the results of these studies.

Five ml. of each of 6 emulsions were placed into centrifuge tubes. The tubes were counterbalanced by each other in the centrifuge. The initial time of centrifugation was recorded the moment at which

Continued on Page 424

[7] Serralach, J. A., Jones, G., and Owen, R. J., *Ibid.*, *25*, 816(1933).

[8] Zuidema, H. H., and Waters, G. W., *Ind. & Eng. Chem.*, Anal. Ed., *13*, 312(1941).

Table II—Exposure of Excellent Samples from Table I to 50° C. to Determine Most Stable Chemical Combination

Sample	% w/w	Span	% w/w	Tween	Result in Days 7	14	21	28	74	120
2	73	40	27	20	E	E	G	G		
7	70	40	30	40	E	E	G	G		
12	67	40	33	60	E	E	E	G		
13	53	60	47	60	E	E	E	E	E	E
17	68	40	32	80	E	G	G	G		
18	54	60	46	80	E	E	G	G		
24	23	80	77	85	E	E	G	P		
25	17	85	83	85	E	E	E	P		

E = Excellent; G = Good; P = Poor

Table III—Stability of Coconut Oil Emulsions with Various Emulsifying Agents

Emulsifying Agents	Total Concentration	HLB	Method of Preparation	After 45 Days at 50°C.	Freezing and Thawing	S Value[c]
A Span 60 Tween 60	6%	9.4	Hand	Good	Good	108
B Span 60 Tween 60	10%	9.4	B&CM[a]	Good	Good	1427
C Span 85 Tween 85	6%	9.4	B&CM	Cracked	Good	172
D Span 85 Tween 85	6%	9.4	Hand	Cracked	Good	143
E Span 60 Tween 60 SMS[b]	6% 1%	...	B&CM	Fair	Good	150
F Span 60 Tween 60	6%	12.2	B&CM	Poor	Cracked	367

[a] B&CM—Emulsion prepared by use of the Waring Blendor and colloid mill.
[b] SMS—Sucrose monostearate.
[c] S—Stability index

SUMMARY AND CONCLUSIONS

Experiments were conducted to determine the HLB value of coconut oil by the use of sorbitan derivatives as emulsifying agents. This HLB was found to be 9.4.

Interfacial tension measurements indicated that Span 60-Tween 60 combination and sucrose monostearate lowered the tension to the greatest extent.

Various exaggerated conditions, such as temperature, freezing, and centrifugal forces were applied to the series of emulsions.

The best emulsion, as far as stability is concerned, contained 50% coconut oil, 5.3% Span 60 and 4.7% Tween 60 and was prepared by the use of a Waring Blendor and a colloid mill.

It was also possible to prepare a suitable coconut oil emulsion containing 50% coconut oil, 3.2% Span 60 and 2.8% Tween 60 by a simple hand method. The oil phase, containing the Span, and the water phase, containing the Tween, were placed into a wide-mouth bottle and agitated by hand for several minutes.

Particle size distribution measurements were performed on several of the emulsions. Flow properties indicated that both emulsions (A and B) had non-Newtonian flow.

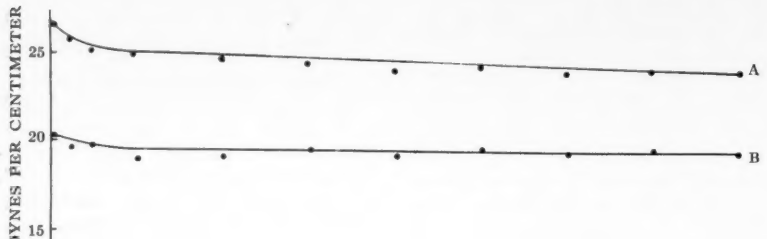


Fig. 1.—The Interfacial Tension Lowering of Several Systems of Coconut Oil-Water Boundary as the Function of Time at 25°C. A—Water-oil, no surfactant. B—Acacia 1%. C—Tragacanth, 1%. D—Tween 60, 0.25%; Span 60, 0.25%. E—Tween 60, 0.5%; Span 60, 0.5%. F—Tween 60, 1%; Span 60, 1%. G—Sucrose monostearate, 1%.

the desired speed in revolutions per minute was obtained. Five speeds were utilized throughout these experiments. At the end of a specified time, the per cent volume of sedimentaion was determined. Calculations were then performed to determine the time for 10% v/v sedimentation.

The relative centrifugal force was calculated for each speed by the use of the following equation[9]:

$$\text{rcf} = \frac{\text{d(rpm)}^2}{(266)}$$

where rcf is the relative centrifugal force, d is the rotating radius in inches, and rpm is revolutions per minute. Time in hours was plotted against the reciprocal of the relative centrifugal forces. Figure 2 is an example of one of the plots. The slope (S) of the resulting curve was an index of the stability of each of the various emulsions when centrifugal force was applied.

Emulsion B had the greatest S value which indicated that it was the most stable emulsion when centrifugal forces were applied. Centrifugation had the greatest effect on emulsion A.

Calibrated glass tubes (height = 115 cm.) were set in pairs in a vertical position and filled with 6 emulsions used in the centrifuge studies. They were enclosed in aluminum foil to be protected from light and were allowed to remain at room temperature for 145 days. Of the 6 emulsions studied, emulsions A, B, and E were considered good since there was no sedimentation at the bottom of the tubes. Emulsion C had approximately

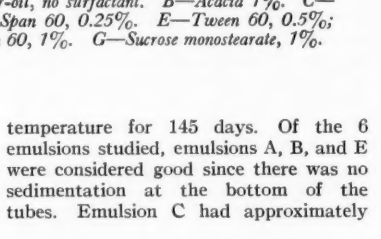


Fig. 2.—The Time of Sedimentation as a Function of the Reciprocal of rcf. (relative centrifugal force) of Emulsion C (Span 85-Tween 85, 6% Total, Blendor & Colloid Mill).

a 6.9% v/v sedimentation, emulsion D a 4.9% v/v sedimentation, and emulsion F a 0.8% v/v sedimentation.

A number of hydrocolloids were employed for their emulsifying properties, but these proved unstable after 72 hours at room temperature. These included acacia, tragacanth, sodium alginate, and pectin in concentration of 1% to 2%. Sucrose monostearate was employed as an emulsifying agent in 1% to 4% concentrations, but was also discarded after 72 hours because of instability of the system.

Particle Size Distribution—The oil immersion of a binocular microscope with a standardized occular micrometer was used to measure the size of the oil globules in the emulsions. The occular micrometer was standardized so that under oil immersion, (97 X), one space in the eyepiece was equal to 1.515 microns. A hemocytometer with a 0.1 mm. depth was used for holding the diluted emulsions while the particles were measured. Emulsions A and B were studied in this phase of the work.

The particles were measured after 3 days and 90 days storage at room temperature. Emulsion B was further studied for particle size distribution after 30 days at 50° ± 1° C. and after 30 days storage at room temperature.

The emulsions were diluted with a 75% aqueous solution of propylene glycol in order to retard Brownian motion. Emulsion A was diluted until a 1 in 50 preparation was achieved, while emulsion B was prepared to a dilution of 1 in 1,000. One drop of this diluted emulsion was placed on the hemocytometer. A cover glass was placed on top of the drop sample, and the slide was placed under the microscope. The diameters on the globules were measured under an oil immersion lens according to particle size ranges. No less than 1,000 globules were measured for each particle size distribution study.

The results indicate that for emulsion A (Span 60-Tween 60, prepared by hand) the particle size of the globules were mostly below 13 μ and not in a uniform distribution. After ninety days' storage there was little change in particle size distribution.

The diameter of the globules of emulsion B (prepared by mechanical means) was below 6 μ, and approximately 82% of the particles measured had a diameter of one micron or less. After 30 days' storage at room temperature there was a reduction in the percentage of particles below one mieron and an increase of particles falling in the 1 to 3 micron range. There was little change in particle size distribution after 90 days' storage at room temperature and 30 days' storage at 50° ± 1° C.

Rheology Study of Emulsions A and B—A Brookfield Synchroelectric viscometer was

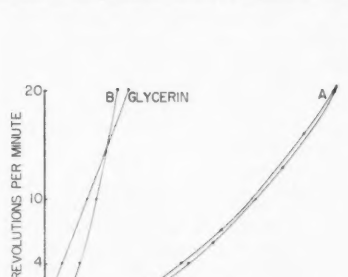


Fig. 3—Rheogram Comparing Flow Characteristics of Emulsions, A, B, and Glycerin at 25°C. A—Span 60-Tween 60, 6% Hand Method. B—Span 60-Tween 60, 10% Blendor and Colloid Mill Method.

[9]From literature of International Equipment Co.

used to determine the flow properties of the emulsions. A 400-ml. beaker and the No. 2 spindle were used. Readings were taken at 2, 4, 10, and 20 rpm., with the temperature being regulated to 25°, 35° and 50° C. Up curves and down curves were recorded and plotted. Figure 3 shows the flow properties of the emulsions studied at 25° C.

The flow properties indicate that emulsions A and B are both non-Newtonian systems. Emulsion A has thixotropic properties (at 25° C.) which disappear at higher temperatures. Unfortunately, curves A and B cannot be definitely characterized as being a "plastic" or "psuedo-plastic" flow, since scale readings could not be taken below 2 rpm. A Newtonian liquid, glycerin, was also included in Figure 3 for comparison.

Discussion

The proper selection of nonionic emulsifying agents giving the most desired emulsification of coconut oil was accomplished by determining the HLB of the oil phase. Experimental procedures indicated that the oil had an HLB value of 9.4, and the most suitable combination of emulsifying agents was Span 60 and Tween 60. According to Richards and Whittet[10] evidence is available to show that Span 60 and Tween 60 are suitable for internal administration. The optimum concentration of emulsifying agents for a stable coconut oil emulsion was 6% when prepared by hand agitation. When the Waring Blendor and colloid mill were used, the concentration had to be increased to 10% to attain the desired stability.

The variance in minimum concentration when prepared by hand agitation as compared to the mechanical method is not so strange when one considers that the energy supplied by mechanical means is much greater than that of a simple hand method. The work or energy needed to produce a dispersion system composed of oil globules in water is dependent upon the interfacial tension and the total surface area of the oil globules.

The increase in surface area is directly attributable to the size reduction of the oil globules in the emulsion. Since the emulsifying agent acts by forming an adsorbed film at the oil/water interface, a larger surface area will require an increase in the concentration of emulsifying agent to form the film around the oil globules. Without this added concentration of emulsifying agent, the emulsion will tend to crack in a short period of time. This did occur when the emulsion containing 6% total concentration of emulsifying agent was passed through the colloid mill.

It is important in emulsion technology that the interfacial tension be lowered and also that an interfacial film be formed rapidly. Less energy will then be needed to disperse the oil particles throughout the water. The stability will also be increased since the rapid formation of a film around the oil globules will act as a mechanical energy barrier to retard coalescence of the oil particles. Even though sucrose monostearate lowered the interfacial tension to the greatest extent in the concentrations used (Fig. 1), it was assumed that the interfacial tension lowering of the Span-Tween mixture would have exceeded that of the sucrose monostearate had the concentration of Span 60 and Tween 60 combination been increased to the concentration employed in the emulsions. This assumption is drawn from the work of Hom[11] on Ethiodol emulsion. This study also indicated that the reduction of the interfacial tension alone would not insure good stability, since sucrose monostearate (low interfacial tension) emulsions had poor stability.

Stability studies of a number of emulsions indicated that formula B (Span 60-Tween 60, 10% B & CM) in Table III produced the best emulsion. Exaggerated conditions of storage, heat, and freezing had relatively little effect upon the stability of this emulsion. A glance at the S value in the same table indicates further that emulsion B was the superior emulsion in the series studied. The S value (index of sedimentation when various centrifugal forces were applied) may be determined in a relatively short period of time. Qualitatively it may be employed as one test for predicting stability over a long period of time when a number of emulsions are compared to each other. The sole reliance on this method of evaluating stability may be misleading, however. Emulsion A in Table III (Span 60-Tween 60, 6%, hand method) was considered a good emulsion even though it had the lowest S value of the 6 studied. Since this emulsion was prepared by the hand method, the oil globules were larger and they would tend to settle much faster when various centrifugal forces are applied to it. Formula F (Span 60-Tween 60, 6%, B & CM) had the second highest S value but was not considered a good emulsion, since heat and freezing had a deleterious effect upon the stability. In this emulsion, the HLB of the emulsifying agents was 12.2 instead of 9.4 and, once again indicating the importance of the proper HLB for optimum stability.

When several stress conditions (temperature and centrifugation) were applied to the 6 emulsions (Table III), two were evaluated as having very good stability. In comparing these short-range studies with actual shelf-life studies at room temperature, a close parallel was observed. For example, emulsions A and B had the greatest stability in both the short-and long-range studies. Those emulsions which were poor in the short-range study were also poor in the longer shelf-life study.

These results would seem to indicate that stress conditions such as freezing, heat, and centrifugation may be utilized to evaluate emulsion stability in a short period of time. This may be an index to the actual stability of these emulsions when studied for longer periods of time. Unfortunately a quantitative prediction for emulsion stability has not been realized. The complexity of multiphase systems prevents such predictions at this time.

Particle size distribution studies may also be used quite profitably in evaluating stability. Since emulsions are thermodynamically unstable systems, the two phases will eventually separate on long standing. The measurement of the diameters of the oil globules (dispersed phase) over a period of time can give an index as to the rate of phase separation. In these studies it was found that the particle size of the globules increased on storage. These results are in agreement with the theory of emulsions in that there is the natural tendency for all systems to reach an equilibrium (phase separation). As the particle size of the globules increase, the system approaches the equilibrium state. Attempts have been made to utilize this type of data for predicting the shelf life of emulsions, but no general agreement seems to exist on the accuracy of the predictions. In these studies there was not enough accumulated data to attempt to predict shelf life.

The flow properties of the same two emulsions are shown to be non-Newtonian. An interesting observation from prepared rheograms is that emulsion A (hand method) was more viscous and had the characteristics of plastic flow with thixotropy at 25° C. Emulsion B (mechanical method) had greater fluidity approaching that of glycerin with no thixotropy. Actually it was difficult to conclude whether these flows should be characterized as "plastic" or "psuedoplastic" since low shearing rates (less than 2 revolutions per minute) could not be obtained with the viscometer employed. ■

Manpower Shortage

During the next 10 years pharmaceutical manufacturers will not be able to staff their plants with bright young men between the ages of 25 and 34 because there will be nearly 750,000 fewer of them than there are today, according to Under Secretary of Labor, James T. O'Connell. He said.

"The only way to increase skilled labor supply, in a word, is training—training for each worker to the full extent of his capabilities, regardless of age, sex, race, religion, physical handicap or national origin. This means better schools for the young, improved opportunities for the older worker, the woman worker, the worker from minority groups. It means a concentration upon the individual such as we have never before achieved."

He said further that the policies which have considered workers in the mass and not as individuals will be abandoned.

[10] Richards, R. M. E., and Whittet, T. D., *Pharm. J.*, *175*, 141(1955).

[11] Hom, F. S., "The Preparation and Stabilization Studies of Ethiodol Emulsions for Intraveneous Hepatolienography," Thesis, Philadelphia, Pa., Temple University, 1956.

The proper selection of

ointment bases

by Cecil P. Headlee*

FATTY, greasy, and oily substances have long been used by man for medicinal purposes. The fats of the crocodile, cat, hippopotamus, horse, and snake were valued in ancient Egypt as agents of pronounced medicinal virtue; goose grease and olive oil were prized by the earliest of Egyptians and Chinese. Today, although certain synthetic preparations are also in use, many of these original substances are utilized in much the same manner. While all these materials are being utilized to a much greater extent than ever before, primarily to carry medicaments, the methods of base selection and the subsequent evaluation of the finished product, i.e. the ointment, have not undergone the same degree of advancement.

Most ointment bases are composed of one or a mixture of substances and as such quite frequently are given too little consideration; custom in many instances determines the selection. On other occasions, the choice made is dependent upon certain pleasing physical properties such as odor and color, rather than upon the over-all effectiveness of the finished product. While one cannot dismiss the fact that pharmaceutical elegance is an important factor to the pharmacist, and also to the patient, neither can one dismiss the more important fact that the ointment is being prepared primarily as a therapeutic agent, and that consequently therapeutic effectiveness should be given consideration over elegance.

Although there may be some controversy as to whether first consideration in the selection of an ointment base be given to the local action of the base as such, or to the action of the complementation of the base to the medicament it is to carry, it seems to the author that the former should be given priority. If this is to be the beginning point in the selection of a base, it would then seem necessary to consider some of the over-all characteristics of the available bases.

General Characteristics of Bases

Inasmuch as most of the materials available as ointment bases act to soothe or soften the skin and mucous membranes, they may be broadly classified as emollients. Although chemical compositions may vary, most of these materials are inert, indifferent substances which may, when applied locally, cause the skin to become more soft and elastic, and at the same time protect it, to a certain degree, from irritation.

Usually, the softening and enhancement of elasticity is due to a certain degree of penetration into the stratum corneum, and to a slight congestion resulting from the application. Certain newer bases may have an emollient action because they act to retard the evaporation of water from the cutaneous surface or by virtue of being an oily lubricant. Water-immiscible oils both retard evaporation and lubricate the skin. On the other hand, water-miscible oils and emulsion-type vehicles lubricate but do not prevent evaporation. In contrast, certain hydrophilic colloids actually act to dry the skin by the removal of water. The protective action is a mechanical action wherein the base represents a barrier to air, dust, bacteria, and other irritating substances.

In general, ointment bases have been placed in three classes: (a) those which act superficially, e.g., petrolatum; (b) those which affect the skin only, e.g., lard; and (c) some which penetrate the skin, e.g , hydrous wool fat. Bliss[1] asserts that his work corrects the more or less generally accepted text and reference book statements that drugs are more rapidly absorbed from the skin if applied as a hydrous wool fat ointment; that absorption takes place if petrolatum is used as the vehicle, and that less absorption results when lard is employed. It is perhaps noteworthy to mention that there is some disagreement as to the efficiency of the penetration of bases.[1, 2, 3] The author is of the belief that the disagreement is due, at least in part, to a difference in the medicaments carried by the bases tested.

In general, the concept now seems to be that liquid and soft fats should be used when the ointment is to be rubbed into the skin glands, that protection and prolonged contact may be obtained by the use of the harder and more adhesive materials such as wool fat and petrolatum mixtures, and that water-miscible bases may be best when the ointment is applied to a denuded surface.[4, 5, 6]

Site of Application

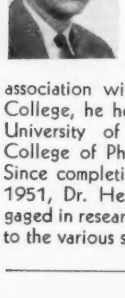
After consideration of the characteristics of the available bases, next thought should be given to the patient's skin. The mechanisms by which substances accomplish passage through normal skin are little known, and with the possible exception of fat-dissolving agents the entering substances are so dissimilar as to stultify any correlation between the chemical nature of the substance and its passage.

With regard to the skin of the patient, such factors as the general characteristics and the area being treated seem important, as the skin of patients varies greatly and as the skin in different areas of one individual patient varies from one area to another. As examples, we know that there are over-all differences between the skin of an outdoor worker and that of an indoor worker, and differences between the sexes.

The degree of penetration of the skin by various substances in many instances is dependent upon the thickness and texture of the skin. The major defense of the human skin against penetration is found in its physical structure. The protection afforded by the highly compact layer of stratified squamous epithelium, a stratum of keratinized cells, and the coating of a fairly water-proof sebum is obvious. These characteristics of skin, in-

* Presented to the Section on Practical Pharmacy, A.PH.A. New York Convention, May 3, 1957.

A contribution from Northeast Louisiana State College, School of Pharmacy, Monroe, La.



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[4] Jeffries, S. F., Nash, H. A., Harmon, R. L., Reynolds, D. C., and Bunde, C. A., THIS JOURNAL, **13**, 337(1952).

[5] Miller, J. L., Slatkin, M. H., and Johnson, B. A., *Arch. Dermatol. and Syphilol.*, **60**, 106 (1949).

[6] Florestano, H. J., Bahler, M. E., and Jeffries, S. F., *J. Am. Pharm. Assoc., Sci. Ed.*, **45**, 538 (1956)

hibitory to penetration, is to be expected, inasmuch as absorption is not a normal function.

There are other general factors regarding the absorption of materials, i.e., ointment bases which may be stated. Age seems to be a factor influencing absorption; the younger the skin, the greater the probability of absorption by that particular skin, up to the years of senility, and in the absence of skin injury. Oily skin, in general offers additional difficulties to the entry of certain substances. However, sustained and profuse sweating, eventuating in an alkaline perspiration, may deprive the skin of its oily protection, and thus facilitate absorption. Softening the layers of the epidermis increases the size of the interstices between the cells, and may thus facilitate penetration. Although the major reason fatty substances favor penetration is their miscibility with the fatty secretion of the sebaceous glands, this power may be due in part also to the fact that they prevent the evaporation of perspiration, thereby causing a maceration and softening of the skin, and ultimately, greater penetration than in the normal skin.

The lining of the sebaceous glands of the normal human skin and areas where the epidermis is thin, richly supplied with lymphatics and free from hair, as in the axilla, loins, and inner surfaces of the arms and thighs, represent sites of application where penetration is maximal. It is generally conceded that vigorous rubbing is necessary to press materials down into the ducts, before penetration is favorable. Normally the ducts are filled with fat so that penetration through the cells is somewhat limited to fats, greases and oils, fat-soluble and fat-solvent substances, and hydrophilic bodies incorporated with the fatty vehicles.

Generally penetration may be increased by hyperemia of an area as produced by heat, friction, or irritation, by occlusive dressings, and by alkalis or hydrosulfides. This increased vascularity enhances absorption by carrying away the absorbed drug and thereby maintaining a higher concentration gradient. Also, if the dead, horny layer of the skin, or the sebum, is removed, penetration is enhanced. Scrubbing the skin with soap and water or the application of keratolytic substances, i.e., acetic or salicylic acid, act in this manner.

Abrasions or breaks in the integument, as from dermatitis or trauma favor entry of materials into the tissue fluids. Such entry however is not true skin absorption.

Medicament to Be Carried by the Base

It is the opinion of the author that the final step in the selection of an ointment base should be with regard to the medicament the base is to carry. The nature of the medicament should of course be kept in mind during the preceding considerations, but the ultimate selection should be made on his previous findings. During the preliminary considerations, the pharmacist will usually find that he has eliminated certain bases as being undesirable, and at the same time he will find that certain other bases will fit the occasion.

A recent investigation[7] has pointed out that the base should always complement the medication it is to carry; that the base should add to the efficacy of the medicament and never decrease the therapeutic effectiveness; that simply because a base has proven its value for one medicament should not necessarily indicate it as the base of choice for another. These facts provide a good foundation for the selection of a base at this point and imply rather acutely that therapeutic effectiveness is to receive priority over pharmaceutical elegance, stability, economy, or any similar factor.

A major problem constantly facing the compounding pharmacist or manufacturer is levigation and particle size. Numerous drugs and chemicals are soluble in certain of the bases, and where this is true, the question of particle size is eliminated. Thus, where possible, a base or vehicle should be selected which permits the medicament to be dissolved. In certain other instances, the medicament may be found to be soluble in an oil, which may in turn be incorporated into the base desirable. It should be remembered that the action of drugs on the skin is more likely to vary in direct proportion to their concentration if a vehicle is utilized in which the drug is soluble than if a base is used in which the medicament is not soluble.

Although particle size is always important, such is even more important when the ointment is to be applied to an irritated, diseased, or denuded skin. In these situations, the smaller the particle size of the medicament, the less likely is the preparation to cause further irritation. Thus, the pharmacist must select the ointment base which is made up in part or whole of a material best for levigating the medicament and reducing it to the impalpable powder desired. Although microscopic examination of ointments dates back to the work of Braubach,[8] a more recent investigation of particle size versus levigating agents lies in the work of Goettsch and Zopf.[9] These investigators recommend Tween 20, 60, 80, Atlas G-1441, polyethyleneglycol 600 monolaurate, polyethyleneglycol 400 monostearate, and lanolin as levigating agents for sulfur; Tween 20 and polyethyleneglycol 400 monostearate as levigating agents for coal tar; polyethyleneglycol 400 monostearate, Tween 20, 60, 80 and polyethyleneglycol 600 as levigating agents for peruvian balsam; and propylene glycol as the levigating agent for resorcinol. Pharmacy is in need of much more of this type of research. Until such a time as all the drugs and chemicals used in ointments have been studied, the pharmacist would do well, it seems, to follow past procedure, in the case of those drugs and chemicals commonly used; in the case of a new drug or chemical, he should select as the levigating agent that substance which serves best to maximally reduce the particle size.

In the selection of the base, care must also be given to volatility of the vehicle. If a volatile base is used, quite necessarily the concentration of the drug in the ointment is subject to change. In the event a large portion of the ointment made with a volatile base is applied for a short duration of time, the evaporation of the base will not appreciably alter the therapeutic action on the skin. However, when only a small amount of such an ointment is applied, the evaporation of the vehicle will definitely alter the therapeutic action.

In conjunction with the foregoing considerations, the ability of the base to properly release the drug must be kept in mind. Generally, drugs are more easily transferred from an ointment to the skin if the vehicle in which the medicament is either dissolved or incorporated is similar to the cutaneous secretions or exudates with which it comes into contact. In those cases wherein such a vehicle is not used, the transfer of the medicament from a vehicle to a cutaneous fluid will depend on the relative solubility of the drug in the vehicle and in the cutaneous fluid. Unfortunately, Pharmacy is lacking with respect to knowledge regarding the release of medicaments from the bases in use. Research leading to the knowledge that sulfathiazole is more effective in an oil-in-water emulsion base than in an all-grease base;[10] that ammoniated mercury may be ineffective in petrolatum;[11] that Chloromycetin in a water-miscible base offers certain advantages;[12] that water-miscible bases seem to more effectively release bacitracin, polymyxin B sulfate, and neomycin sulfate;[6] and that Carbowax ointment is a suitable base for quarternary ammonium salts[13] is indicative of the fact that consideration must be given the base as to its effectiveness in releasing the medicament. Much more work of this nature is needed. The difficulty in this type of research rests in the vast number of tests as necessitated by the numerous drugs and chemicals currently being used in ointment form.

To a degree, the pharmacist is concerned with the stability of his finished preparation. However, because of the relatively short period of time the patient will use the ointment, the problem of stability is not so acute with the pharmacist as with the pharmaceutical manufacturer. Regardless, some thought should be given to stability. A few rather elementary facts may usually govern the situation. Petrolatum or mixtures of petrolatum and mineral oil or paraffin wax are generally considered to be stable at room temperature. Polyethylene-mineral oil jels will withstand greater fluctuations of temperature, and hydrocarbon jels in general have been considered valuable from the standpoint of stability. Certain glycol-type bases, and animal and vegetable fat bases have not been considered as being very stable. The pharmacist should attempt to select a base which will enhance stability, but such a selection must not detract from the therapeutic effectiveness of the ointment. ■

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[7] Mutimer, M. N., Riffkin, C., Hill, J. A., Glickman, M. E., and Cyr, G. N., *J. Am. Pharm. Assoc., Sci. Ed.*, **45**, 212(1956).

[8] Braubach, C., *Am. J. Pharm.*, **82**, 314(1910).

[9] Goettsch, R. W., and Zopf, L. C., THIS JOURNAL, **17**, 396(1956).

[10] Pillsbury, D. M., Wammock, V. S., Livingood, C. S., and Nichols, A. C., *Am. J. Med. Sci.*, **202**, 808(1941).

[11] Derzavis, J. L., Rice, J. S., and Leland, L. S., *J. Am. Med. Assoc.*, **141**, 191(1949).

[12] Finnerty, E. F., Jr., *Med. Times*, **81**, 530 (1953).

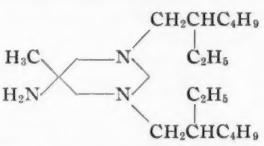
[13] Prusak, L. P., and Mattocks, A. M., *J. Am. Pharm. Assoc., Sci. Ed.*, **38**, 67(1949).

Topical applications of a new

antibacterial agent

by *Walter G. Fredell, Robert C. White and Robert G. Sanders**

A NEW CLASS of compounds, derivatives of hexahydropyrimidine, exhibit interesting biological activity which makes possible a wide variety of topical applications. One of this class, bis-1,3-β-ethylhexyl-5-amino-5-methyl hexahydropyrimidine, hereinafter referred to as hexetidine, has been formulated into a number of topically useful preparations. The structure of this compound is illustrated below.



Bis-1,3-β-ethylhexyl-5-amino-5-methyl hexahydropyrimidine

Hexetidine is a somewhat viscid oil having a specific gravity of about 0.87. It is soluble in neutral distilled water only to the extent of about 1 part in 10,000, but is miscible with alcohols, benzene, polyethylene glycols and many other organic solvents. An acid salt is formed with hydrochloric acid at a pH of about 3.0. This salt is quite soluble in water.

Toxicity Studies

The acute toxicity data of the compound indicate its safety in the topical applications hereinafter presented. The oral LD_{50} of hexetidine in peanut oil in rats is 1430 mg./Kg. The intraperitoneal LD_{50} in mice varies from 30 to 85 mg./Kg. depending upon the vehicle used to disperse the compound. The percutaneous LD_{50} has been determined as 1.86 ml./Kg. When hexetidine was included in the diet of rats at levels of 0.02% and 0.05% for a period of one year, no toxicity was shown as indicated by food consumption and weight gain data. Histopathological study on representative animals from the chronic feeding tests showed no pathological lesions attributable to hexetidine in any of the tissues.[1]

Hexetidine was tested as a 1% ointment on the forearms of 220 subjects. In no instance was there evidence of primary irritation or sensitization.

Broad Spectrum Antibiotic

It is the antibacterial spectrum of the compound, which, bearing a similarity to the broad spectrum antibiotics, suggested its use in topical formulations. Table I shows typical *in vitro* sensitivities of a number of strains of microorganisms. It is to be noted that the compound shows activity against both Gram-positive and Gram-negative organisms, although the Gram-negative show greater variation in sensitivity. It is particularly interesting

[1] Calandra, J., and Sanders, R. G., To be published.

Table I—Sensitivity of Microorganisms to Hexetidine

Microorganism	No. of Isolates	MIC[a], mcg./ml.
Micrococcus pyogenes		
Var. aureus	45	1–10
Var. albus	15	1–10
Streptococcus hemolyticus	4	5–10
Streptococcus sp. (5)	21	1–5
Mycobacterium tuberculosis	1	5–10
Mycobacterium ranae	1	5–10
Mycobacterium spp. 607	1	5–10
Bacillus subtilis	1	5–10
Bacillus sp. (6)	6	5–10
Clostridium welchii	1	5–10
Clostridium sp. (2)	2	5–10
Actinomyces spp.	1	1–5
Pasteurella multocida	1	1–5
Pasteurella pseudotuberculosis	1	100
Escherichia coli	12	25–100
Shigella dysenteriae	1	100
Pseudomonas aeruginosa	2	100–300
Proteus vulgaris	2	50–100
Klebsiella pneumoniae	1	100–200
Total	116	

[a] Minimum inhibitory concentration.

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* Presented to the Section on Practical Pharmacy, APhA N.Y. Convention May 2, 1957.

Table II—Sensitivity of Pathogenic Fungi to Hexetidine

Organism	MIC, mcg./ml.
Trichophyton mentagrophytes	75 (5)[a]
Trichophyton inguinale	10
Trichophyton interdigitale	25
Trichophyton rubrum	25
Trichophyton gypseum	15
Microsporum audouini	.. (5)
Cryptococcus neoformans	100 (5)
Blastomyces dermatitidis	100
Histoplasma capsulatum	50

[a] Figure in parentheses is MIC by agar dilution—all others, broth dilution.

that resistance of microorganisms to hexetidine is not readily developed, if at all.

Table II shows the sensitivity of pathogenic fungi to hexetidine. In addition, it has been tested against 65 strains of *Candida* species most of which are inhibited by 100 mcg./ml. or less. These data are presented in Table III. This activity against fungi and *Candida* suggests its application in the treatment of certain types of skin infections.

One other property makes this compound interesting in topical applications. Read has demonstrated that hexetidine is present at the site of application in biologically active concentrations 72 hrs. after application.[2] This resistance to washing away is an important factor in preparations for skin infections.

Table III—Sensitivity of Candida Species to Hexetidine

Source	Species	Minimum Inhibitory Concentration (mcg./ml.) 25	25–50	50–75	75–100	100–200	200	*Totals*
Barnes Hosp.	*C. albicans*			2	4			6
Mayo Clinic	*C. albicans*		7	5	1	1		14
Baylor Univ.	*C. albicans*		1	2	9	9	6	27
Total	(*C. albicans*)		8	9	14	10	6	47
Baylor Univ.	*C. tropicalis*		1	1	5	1	3	11
Baylor Univ.	*C. krusei*		5	1				6
Baylor Univ.	*C. stellatoidea*	1						1
Total	(all species)	1	14	11	19	11	9	65

Table IV—Solubility of Hexetidine in Isopropyl and Ethyl Alcohols

Hexetidine, % *Concn.*	Alcohol (by vol.) *Min. concn. for clear solutions* (%)		Apparent pH of Soln.	Concn. of Succinic Acid (%)
4.0	Iso Pr	66	10.3	..
1.0	Iso Pr	25	6.5	0.2
1.0	Iso Pr	21	5.28	0.4
1.0	Iso Pr	19	4.70	0.6
0.5	Iso Pr	59	10.45	..
0.5	Iso Pr	27.5	6.32	0.1
0.1	Iso Pr	23.5	6.65	0.02
0.1	Ethyl	35.6	6.6	0.02

Formulations

During formulation some information about incompatibilities was found. A case in point is the formation of complexes with certain metallic salts, e.g. zinc, the resulting compound lacking in microbiological activity.

From the preceding statements of physico-chemical properties of hexetidine it is understandable that difficulties could be encountered in pharmaceutical formulation. The approach to individual formulation problems and the manner in which each difficulty was overcome is presented in the following examples:

Example I: Preparations depending upon alcohol for solubility. Table IV gives solubility of hexetidine in ethyl and isopropyl alcohols.

It is apparent that solubility in hydroalcohol depends somewhat upon pH, and, that in the useful pH range of most topical preparations, alcohol concentrations in excess of 30% are required. Alcohol proved a convenient carrier for an aerosol spray preparation containing hexetidine. Alcohol was also used in the preparation of an antiseptic scrub with composition as follows:

Hexetidine	0.5 Gm.
PEG-400 distearate	1.0 Gm.
Sipon L 22[3]	49.0
SD 40 alcohol *q.s.*	100 cc.
Perfume *q.s.*	

Example II: Colloidal dispersion of hexetidine. It was theorized that, if the compound were converted to its hydrochloride at pH below 3.0 and then neutralized in the presence of a gum polymer, a colloidal dispersion might result. Concentrations of hexetidine at 0.1% and 0.5% were dispersed in this manner using polyvinylpyrrolidone and sodium carboxymethylcellulose as a stabilizer. The resulting preparations exhibited no separation on standing. The vehicle, because of its innocuous character, was excellent for the preliminary clinical investigation of the active ingredient in a multitude of applications.

Table V—Colloidal Dispersions of Hexetidine

	A	B	C
Hexetidine	0.1	0.1	0.1
Tween® 20	1.4	1.4	1.4
Sodium Chloride	—	0.45	0.9
Dist. water *q.s.*	100	100 ,	100
Stability	Cloudy in less than 2 weeks	Clear after 2 weeks	Clear after 4 weeks

Example III: Preparations depending upon nonionic solubilizers for dispersion. In anticipation of alcohol-free formulations, preliminary studies were carried out as indicated in Table V.

Series A, B, and C were repeated at Tween 20 concentrations of 1.8%, 2.2%, 2.6%, and 3.0% and the entire group repeated with Tween 80 in place of Tween 20. In general, it was found that stability was increased with increasing Tween concentration and further increased by the addition of sodium chloride and by the substitution of Tween 80 for Tween 20. The use of the Tweens provided an answer to various liquid preparations containing hexetidine where clarity at low alcohol concentrations is desired.

Nonionics have been reported as interfering with the activity of certain bacteriostatic agents;[4] however, it has been demonstrated that Tween 80 in low concentration does not interfere with the activity of hexetidine.

Example IV: Preparations using polyethylene glycols as vehicles. The liquid Carbowaxes were found to be solvents for Hexetidine but precipitation occurred when 20% water was added. Some variation was found in the different lots of PEG 400 since on chilling some lots would cloud due to higher molecular weight compounds present. When this occurred, the PEG 400 was chilled to 10°C. and filtered at that temperature.

PEG 400 served as a satisfactory vehicle for an ear preparation and the other

Table VI—Inhibition by Hexetidine Powders

		Zone of Inhibition (mm.)
0.5% Hexetidine	7% Tween 20-Zinc oxide	4–6
0.5% Hexetidine	Zinc oxide	5–7
Zinc oxide		1
0.5% Hexetidine	7% Tween 20-Talc	1–2
0.5% Hexetidine	Talc	0
Talc.		0
0.5% Hexetidine	7% Tween 20-potato starch	3–4
0.5% Hexetidine	Potato starch	4–5
Potato starch		0

[2] Read, R. R., private communication.

[3] A brand of ammonium lauryl sulfate, produced by American Alcolac Corp., Baltimore, Md.

[4] de Navarre, M. G., *J. Soc. Cosmetic Chemists*, 8, 68 (1957).

Continued on page 431

Re-evaluation of ointments utilizing

lard as a base

by H. I. Silverman and A. Urdang*

IN RELATIVELY RECENT TIMES newer developments in ointment base technology[1], have largely displaced the older grease-type bases exemplified by lard, the adipose tissue of *Sus scrofa var. domesticus*. These fatty bases have fallen into disfavor for several reasons, the more salient being the rapid development of rancidity[2,3] and greasiness upon application. In the former case, stability may be promoted by the incorporation of suitable antioxidants, the earliest product of this type having been produced by benzoination.[4] While this development prevented the breakdown of the glyceryl esters to some degree, the base was still greasy and not acceptable from a cosmetic standpoint.

Other properties inherent to lard which are undesirable in light of modern theory[5] regarding ointment bases are its graininess (increasing during storage), odor, variability in physical properties from lot to lot, poor plastic range, special storage conditions needed, and low water capacity.

In the early 1950's one of the larger processors of meat by-products, using a patented process,[6] placed on the market a chemically-altered and refined lard that eliminated many of these undesirable properties. Of special utility is the extended plastic range[7] of this altered lard resulting from a directed interesterification process.[8] The product is, however, still greasy since it was designed especially as a shortening for the baking industry. Nevertheless shelf life has been extended, and the material is consistently uniform in properties being subjected to quality control.

Due to this unique development, and also due to the relative cheapness of this modified lard, pharmaceutical re-evaluation studies appeared to be in order, particularly since the use of lard as an ointment base for bactericidal agents has been shown to result in wide zones of inhibition when using the agar cup plate method.[9] Also in its favor is its ability to dissolve or be miscible with fat soluble medicaments.[10]

This paper represents, therefore, the first in a series involving products of biological origin which, because of recent technicological advances, appear to warrant re-investigation.

Method and Data

Several ointment bases were prepared utilizing Pertex® as the primary ingredient. All were manufactured by fusion at 80°C., using a high speed mechanical stirrer. Of those prepared, the following base proved preferable and was selected for further study:

Formula	Percent Composition
Pertex®	65
Glyceryl monostearate s.e.	5
Ucon fluid® 50-HB-5100	20
Ethoxylan® 100	10

To determine the water holding capacity of the base, increasing amounts of water were incorporated at room temperature with predetermined weighed quantities of base. It was found that up to 40% of water could be incorporated before the base lost ointment-like consistency.

Patch-testing to determine whether sensitivity might be a factor was performed in the following manner. Ten white male subjects between 20 and 25 years of age were used in the experiment. None of those tested had any previous history of allergies or asthma, or had any skin condition existing at the time of testing. A weighed quantity (0.5 Gm.) of ointment base was applied by inunction to a 2- inch square area on the forearm, previously shaven, and covered with a sterile guaze pad. The pad was removed and the area of application observed using a 10× lens after 1, 8, and 24-hour intervals. In no case was any evidence of irritation or erythma noted. Furthermore none of the test subjects experienced any itching or other symptoms in the area of ointment base application.

In determining chemical compatibility of the ointment base, several commonly used topical medicaments were incorporated,[11] with Table I indicating those used, percentages, and relative stabilities at 25°C. and 38°C.

Accelerated shelf life studies were carried out using: (a) the ointment base; (b) the base further fortified by the addition of the preservatives methylparaben 0.025% and propylparaben 0.015%; and (c) Pertex®. The procedure followed was that of Schaal as outlined in Jacobs.[12] Rancidity or other evidence of decomposition was absent in all 3 samples after

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* For biographies of authors, see page 414.

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The lard used in this study was supplied by the Procter & Gamble Co.

[1] "Remington's Practice of Pharmacy," 11th ed., Mack Publishing Co., Easton, Pa., 1956, pp. 335–351.

[2] "American Pharmacy," 4th ed., Lippincott, Phila., 1955, p. 326.

[3] "The Art of Dispensing," 12th ed., Chemist and Druggist, London, 1953, p. 205.

[4] Husa, W. J., and Riley, D. E., *J. Am. Pharm. Assoc.*, **23**, 544(1934).

[5] Mutimer, M. N., Rifkin, C., Hill, J. A., Glickman, M. E., and Cyr, C. N., *J. Am. Pharm. Assoc., Sci. Ed.*, **45**, 212(1956).

[6] U. S. Patents 2,332,531 and 2,332,532 (June 1, 1948); and 2,733,251 (Jan. 31, 1956).

[7] Placek, C., and Holman, G. W., *Ind. Eng. Chem.*, **49**, 162(1957).

[8] Hawley, H. K., and Holman, G. W., *J. Am. Oil Chemist's Soc.*, **33**, 29(1956).

[9] Gershenfeld, L., and Brillhart, R. E., *Am. J. Pharm.*, **111**, 430(1939).

[10] Peck, S. M., *Drug and Cosmetic Ind.*, **72**, 46 (1953).

[11] Oleaginous/Absorbtion Ointment Bases, Dept. of Medical Services Release, E. R. Squibb, August 26, 1954.

[12] Jacobs, M. B., "Chemical Analysis of Foods and Food Products," 2nd ed., D. Van Nostrand, New York, 1951, pp. 390–397.

a test period of 20 days. It should be noted that during the processing of Pertex there is added as preservatives 0.01% of butylated hydroxyanisole and 0.01% of butylated hydroxytoluene.[13–15] In addition three more 50-Gm. samples (of each of the above bases) were allowed to remain at room temperature in 250-ml. Griffin beakers, uncovered and exposed to the atmosphere. In no instance was there any evidence of organoleptic decomposition after standing for a period of 90 days. Assaying by the Kreis Method[16] to test for evidence of possible decomposition products (epinhydrinaldehyde) was also negative.

Discussion and Conclusions:

Lard has lost popularity as an ointment base due to rapid development of rancidity and nonuniform physical properties. However, in view of recent advances in altering the structural composition of this fat it deserves re-evaluation. These preliminary studies would appear to indicate that a product superior to the now official lard has been produced. Upon analyzing the accumulated data, the following statements would appear evident:

The preferred ointment base using an animal fat would, from the stability standpoint, be anhydrous[17] yet have the property of retaining large quantities of water and be easily removed from the skin. The base selected for this study has met with these criteria and in addition is a smooth, homogeneous, stainless, odorless, tasteless, unctuous, and stable substance. On standing for prolonged periods, it does not become rancid, gummy, or sticky and exhibits a uniform consistency over a wide range of temperature, (m. pt. 50–55°C.). Most advantageous from a compounding standpoint is the moderate thixotropy exhibited by the base when levigated. It softens sufficiently when medicaments are incorporated to exclude the addition of a levigating agent. This valuable property allows for rapid and uniform dispersion of added materials shortening the length of time required for intimate dispersion of the same medicament in a petrolatum type base. Upon standing the base reverts to its original consistency within minutes.

Incorporation of a modified lanolin (Ethoxylan®) heightened the hydrophilic property while lending an emollient and softening effect and imparting a velvety, nongreasy sensation to the skin.

The addition of the Ucon® fluid 50-HB 5100 appeared, after extended investigation, to produce the evidence of thixotropy in addition to stabilizing the fatty base and extending its plastic range.

Testing for evidence of possible decomposition products in the base and Pertex® at both room and elevated temperatures gave negative results over extended time periods. While there is no apparent benefit to be gained by the addition of the parabens to the anhydrous (hydrophilic) base, they should be added to prevent possible mold growth in the event water may be subsequently added.

It is recommended in light of this investigation that consideration be given towards the replacement of the now official lard with this newly developed and stabilized form which has been used in the ointment base formulations herewith reported. ■

Table I—Compatibility Studies

Medicament	Immediately after Incorporation	After 2 Weeks at 25°C.	After 4 Weeks at 38°C.
Ammoniated mercury 5%	C	CC	CC
Benzoic acid 10%	C	C	C
Boric acid 10%	C	C	C
Calamine 10%	C	C	C
Cade oil 5%	C	C	C
Coal tar 5%	C	C	C
Chrysarobin 5%	CC	CC	CC
Calomel 3%	C	CC	CC
Ephedrine sulfate 1%	C	C	C
Menthol 1%, Camphor 1%, Phenol 2%	C	C	C
Iodochlorhydroxyquinoline 3%	C	C	C
Methyl salicylate 10%	C	C	C
Liquified phenol 2%	C	C	C
Pine tar 10%	C	C	C
Peruvian balsam 10%	C	C	C
Resorcinol 10%	C[a]	C	C
Salicylic acid 5%	C	C	C
Sulfathiazole 5%	C	C	C
Sulfur 10%	C	C	C
Tannic acid 20%	C	C	CC

[a] Slightly gritty to touch. C = Compatible. CC = Color change.

[13] Anon., *J. Agr. Food Chem.*, **4**, 667(1956).
[14] U. S. Dept. of Agriculture, Washington 25, D.C., "Regulations Governing the Meat Inspection of the United States," 1952.
[15] "Encyclopedia of Chemical Technology," Vol. 8, Interscience, New York, 1951, pp. 836–839.
[16] "United States Dispensatory," 24th ed., Lippincott, Phila., 1947, p. 759.
[17] Florestano, H. J., Bahler, M. E., and Jeffries, S. F., *J. Am. Pharm. Assoc., Sci. Ed.*, **45**, 538 (1956).

Continued from page 429

members of the series served as components of ointment and suppository bases. Vaginal suppositories, with the following percentage composition, adequately released the active ingredient:

Hexetidine	0.088
Tween 80	1.212
Carbowax® 4000	43.700
Carbowax 1500	55.000
	100.000

A base for hexetidine ointments of various concentrations was as follows:

Carbowax 4000	50
PEG 600	40
Tween 80	1
Water	9
	100

Use of ointment bases with fatty material present usually yielded products that were less active bacteriologically.

Example V: Powders—The incorporation of hexetidine into a dusting powder evolved principally into determining the release of the active ingredient. Table VI shows the zones of inhibition of various hexetidine powders. Zones of inhibition were determined by the method of Reddish for antiseptic powders.[5]

Example VI: Gels—Gels at various pH's were prepared with CMC, methylcellulose, Carbopol® 934, and sodium alginate. A typical formula follows:

Hexetidine	0.1
Tween 80	1.4
CMC Type 120 high	7.5
Dist. Water *q.s.*	100.0
Lactic Acid *q.s.* to adjust pH	

Other grades of CMC used were Type 70 High and 70S High. Carbopol 934 gave a good gel at pH 6.2 and above; at pH 5 the product had the characteristic Carbopol odor which was disturbing to handlers of the product. At pH 4.4 the product thinned out considerably.

In the case of all preparations activity was checked by a measurement of the zone of inhibition on an agar plate using *Micrococcus pyogenes* var. *aureus* according to the method of Reddish.[6] Read and Patermann[7] have developed analytical methods based on color developed with bromcresol purple after extraction with suitable solvents and by electrophoretic methods. These assay methods proved applicable in the case of all preparations and biological materials as well.

Hoefer[8] and Wolfe[9] have reported on the clinical efficacy of a vaginal preparation containing hexetidine.[10] Kral[11] has reported on the effectiveness of a veterinary ointment with hexetidine.[12] ■

[5] Reddish, G. F., *Antiseptics, Disinfectants, Fungicides and Sterilization*, Lea & Febiger, Philadelphia, 1954, p. 351.
[6] Reddish, G. F., *J. Lab. Clin. Med.*, **14**, 649 (1927).
[7] Read, R. R., and Patermann, H. E., To be published.
[8] Hoefer, W. G., *Antibiotic Med. & Clin. Therapy*, **4**, 31(1957).
[9] Wolfe, J. R., *Illinois Med. J.*, In press.
[10] Warner-Chilcott Laboratories product marketed as Sterisil Vaginal Gel.
[11] Kral, J., *J. Am. Vet. Med. Assoc.*, **130**, 41 (1957).
[12] Warner-Chilcott Laboratories Veterinary Division as Triocil Ointment.

be in the hands of a national advisory committee which I shall appoint soon. I am sure that the agencies of the Federal Government, working through the Interdepartmental Committee on Children and Youth of which you are chairman, will do everything they can to make the 1960 conference a fruitful one.

Sincerely,

DWIGHT D. EISENHOWER

Today's Best Bargain

In a speech entitled "Today's Best Bargain", delivered by Edmund R. Beckworth, Jr., President of Crookes-Barnes Laboratories, before the Florida Chapter of the Arthritis and Rheumatism Foundation, he said:

"Whatever our weaknesses, 2 things stand out. In our world today, we are racing against the imperial might of Russia. In the area of medicine, pharmacy, and related health activities our private, commercial, competitive system has us not only ahead of Russia but gaining. In those areas in which we are most concerned about Russia's having caught us, or nearly being up to us, we have attempted to adopt their centralized, Government-controlled pattern. 'Free Enterprise' is today a slogan of something less than popular acceptance. In terms of medicine it has meant, however, the highest standard in the world of professional qualification and professional integrity. In terms of pharmaceuticals and the drugs which the physician has available for his choice when he needs them, it has meant the world's greatest $3 bargain, the prescription purchased from the pharmacist."

Employment in Pharmacy

The number of employees in the industrial segment of Pharmacy for 1956 and 1957 averaged 97,700 and 103,000, respectively. Preliminary figures for January 1958 indicated there were 107,700 employees in the industry. Production workers and nonsupervisory employees numbered 61,800 in January of this year as compared to averages of 60,000 for 1957 and 57,800 for 1956.

Apparently the drug industry has not been affected yet by the general business recession.

Average weekly gross earnings for production workers or nonsupervisory employees in January 1958 averaged $85.28. The corresponding averages for 1957 and 1956 were $82.82 and $78.55, respectively. Average hourly earnings were $2.07 in January 1958 as compared with an average of $2.03 for 1957 and $1.93 for 1956.

Resistant Staphylococcus Infections

Throughout the world in spite of the enormous success of antibiotics many hospitals and even whole communities are having a serious problem with epidemic strains of antibiotic-resistant staphylococcus.

There appear to be innumerable strains capable of producing infections and the number of these infections is increasing. Particularly serious are those caused by the coagulase-producing strains of staphylococcus aureus hemolyticus. (impetigo, puerperal mastitis in recently delivered women, burn and post-operative wound infections, pneumonia in debilitated patients. The staphylococcus may also be responsible for osteomyelitis, meningitis, septicemias, empyemas, boils and abscesses, otitis media, paronychiae, etc.)

According to the American Hospital Association, patients who acquire these infections in the hospitals are potential spreaders of resistant strains to the community after discharge; staphylococci may implant in the nasopharynx without overt disease thus producing carriers.

Contributing factors to be avoided, published by the AHA, include routine indiscriminate use of antibiotics, long hospital stay, prolonged operative procedures, etc.

NABP Philosophy

In his address at Los Angeles as President of the National Association of Boards of Pharmacy, Felix Blanc made several statements which have important implications.

In regard to pharmaceutical education, he said

"The colleges of pharmacy are faced with the obligation to prepare future graduates for lifetime professional and intellectual growth, and to develop new and more effective means for protecting every pharmacist from his own self-destruction through frustration and obsolescence."

In regard to hospital pharmacy he said

"Any segment of the profession which does 26% of the total pharmaceutical volume is not one that can be treated with indifference. State Boards of Pharmacy should acquaint themselves with the conditions of pharmaceutical practice in hospitals as well as the problems which are involved...

"...in some states where it is obligatory by law to obtain a permit in order to conduct a pharmacy, it has not been made obligatory for hospitals or governmental agencies which conduct pharmacies to obtain a permit to conduct a pharmacy or to conform to requirements that are applicable to all other pharmacies... pharmacies in all phospitals and governmental institutions should be compelled to comply with the laws applicable to pharmacies located elsewhere, should be compelled to have qualified and licensed pharmacists in charge of and on duty in the pharmacy, and should be properly equipped and staffed to function as a pharmacy."

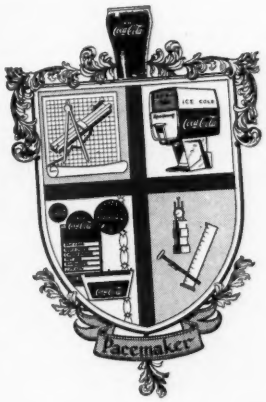
President Blanc also touched on the control of drugs in nursing homes and rest homes, and pointed out the great need for more competent supervision and control of the dispensing of medication in small hospitals and these smaller institutions.

Communicable Diseases Summary

The number of cases of the communicable diseases shown in the table below are based on reports by Health Officers of each State and of Alaska, Hawaii, and Puerto Rico to the National Office of Vital Statistics of the Department of Health, Education, and Welfare, Washington, D.C. The number of cases of each disease occurring during each of the last 4 weeks are reported and also cumulative totals to date for 1958 and for the corresponding period of 1957, as well as the 1953–1957 median for this same period. The approximate seasonal low point for each of the diseases is shown in the last column.

Communicable Disease *Selected Notifiable Disease*	Cases Reported for Week Ending *May 17, 1958*[a]	*May 24, 1958*	*May 31, 1958*[b]	*June 7, 1958*	Cumulative Number *First 23 weeks 1958*	*1957*	*Median 1953–1957*	Low Point (*Approximate Seasonal*)
Anthrax	–	–	–	–	2	10	15	[c]
Botulism	–	–	–	–	2	–	5	[c]
Brucellosis	16	21	18	13	328	434	552	[c]
Diphtheria	11	11	11	5	326	422	775	July 1
Encephalitis, infectious	28	35	31	49	659	596	596	June 1
Hepatitis, infectious and serum	323	316	231	279	7,665	8,223	15,447	Sept. 1
Malaria	3	1	2	3	29	39	115	[c]
Measles	36,053	36,987	24,083	33,807	595,508	385,537	448,759	Sept. 1
Meningococcal infections	36	45	42	46	1,323	1,266	2,002	Sept. 1
Meningitis, other	33	34	21	49	1,076	772	---	---
Poliomyelitis	26	33	41	29	446	1,037	2,686	Apr. 1
Paralytic	14	14	17	14	224	493	---	Apr. 1
Nonparalytic	4	13	19	12	145	396	---	Apr. 1
Unspecified	8	6	5	3	77	148	---	Apr. 1
Psittacosis	4	1	2	2	62	32	150	[c]
Rabies in man	–	–	–	–	2	3	3	[c]
Typhoid fever	7	22	23	8	338	459	657	Apr. 1
Typhus fever, endemic	1	1	1	4	23	50	50	Apr. 1

[a] Data exclude report from Pa. for current week. [b] Data exclude reports from Mont., Nebr., S. C., and S. D. for the current week. [c] Data show no pronounced seasonal change in incidence. Symbols: 1 dash (–): no cases reported; 3 dashes (---): data not available.



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Modernize . . . glamorize . . . merchandise your fountain in one easy move: see your favorite wholesaler (or the representative for Coca-Cola who calls on you) for the profitable details on the new Dole Citation dispenser.

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Economics

by Richard R. Dier

CHART I—Hair Care Preparations and Accessories

Percentages of purchases by women Showing also percentages of purchases by outlets[a]

	% of purchases made by women	% of all purchases made in *Retail Pharmacies*	*supermarkets*	*other* (10% & over)
Hair Care Preparations				
Tints and dyes	100.0%	57.1%	5.7%	22.9%[b]
Rinses (cream)	98.2	38.6	28.1	17.5[d]
				10.5[c]
Spray hair fixatives	96.6	51.0	22.3	—
Waveset preparations	94.7	29.0	34.2	26.3[c]
Rinses (other than cream)	94.4	44.4	5.6	38.8[c]
Home permanent kits & refills	93.3	50.3	31.3	—
Shampoos	86.7	33.4	48.1	—
Women's hair tonics	86.4	40.9	11.4	20.4[e]
				11.4[d]
Hairdressings—brilliantines, pomades, lacquers	64.6	47.4	25.8	—
Dandruff removers	53.0	55.9	2.9	32.4[e]
Men's hair tonics	40.4	41.2	40.8	—
Hair Care Accessories				
Bobby pins	94.8	23.1	38.8	29.1[c]
Hair nets	100.0	26.8	9.8	51.2[c]
Combs	76.3	26.3	21.1	34.2[c]

[a] From "McCall's Drugs & Toiletries Purchase Diary Study"
[b] Department stores
[c] Variety stores
[d] House-to-house salesmen
[e] Cosmetic & Beauty shops

Pharmacies Sell Most Hair Care Preparations

In 8 out of 11 hair care preparations, retail pharmacies outsell all other outlets, and control 40.9% to 57.1% of the market. These 8 preparations include tints and dyes, spray hair fixatives, rinses (other than cream), home permanent kits and refills, women's hair tonics, hair dressings (brilliantines, pomades, lacquers), dandruff removers, and men's hair tonics.

According to data revealed in "McCall's Drugs and Toiletries Purchase Diary Study" conducted by the Home Testing Institute for McCALL'S MAGAZINE, supermarkets outsell pharmacies in waveset preparations and shampoos. In cream rinses, the combination of supermarkets, variety stores, and house-to-house salesmen also outsell pharmacies.

The study also shows that women make 86.7% of the shampoo purchases, 98.2% of the purchases of cream rinses, and 100.0% of the purchases of tints and dyes. Other facts disclosed by the survey:

1. Most women go to variety stores for hair nets and combs, but a larger percentage buy bobby pins in supermarkets, with variety stores the second choice.

2. Department stores rate second to pharmacies in the purchase of dyes, the only items in which this type of outlet enjoys any substantial volume.

3. House-to-house salesmen are patronized by 11.4% of women for women's hair tonics, and by 17.5% of women for cream rinses.

4. Beauty or cosmetic shops are preferred by 32.4% of women for their purchases of dandruff removers and 20.4% of women for women's hair tonics (See Chart I.).

Advertising–Drugs and Toiletries

Advertising of drugs and toiletries in magazines in March 1958 approximated $6,214,000, compared to $6,002,000 in March 1957, according to the U.S. Office of Business Economics.

It is interesting to note that in the field of television advertising in 1957 a monthly average of $12,385,000 was spent for drugs and toiletries. This topped the television advertising field for all other types of products, including automotive, foods, soft drinks, soaps, cleansers, and smoking materials.

In newspaper advertising, Lever Brothers spent $4,549,521 in 1957; Colgate-Palmolive was next highest with $3,591,193; and Procter & Gamble spent $1,952,448.

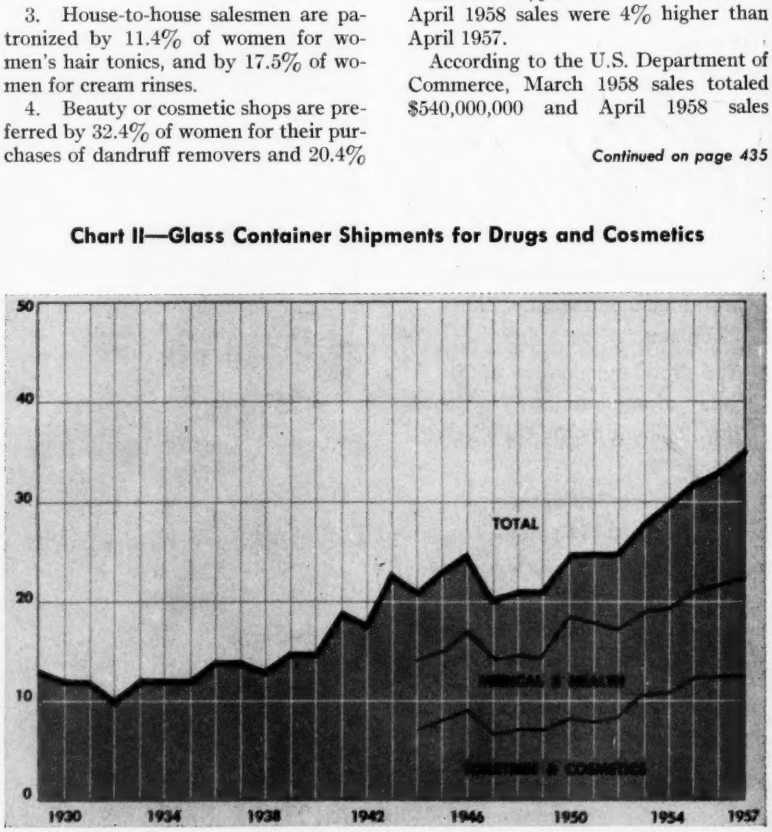
Retail Pharmacy Sales

Retail pharmacy sales in March 1958 were about 6% above March 1957, and April 1958 sales were 4% higher than April 1957.

According to the U.S. Department of Commerce, March 1958 sales totaled $540,000,000 and April 1958 sales

Continued on page 435

Chart II—Glass Container Shipments for Drugs and Cosmetics



Source: Glass Container Manufacturers Institute, Inc.

Federal and State Actions

Continued from page 434

FDA ACTIONS

Illegal Over-the-Counter Sales for the Month of May

James Francis LeMon, t/a Yorfax Drug, Denver, Colo.—Selling and refilling prescriptions for amphetamine and prednisolone without physicians' authorizations. Fined $400 and placed on probation for 2 years.

Beach Drug Company, Inc. Howard H. O'Brien, Pres., Savannah Beach, Ga.—Selling barbiturates, hormones, and Banthine without physicians' prescriptions. Firm and O'Brien each fined $50 and placed on probation for 2 years.

William L. Easterwood and David C. Crocker, former employees, Poole's 78 Service Station, Waco, Ga.—Selling amphetamine without physicians' prescriptions. Easterwood and Crocker both placed on probation for 2 years.

Paul Rogers, employee (2 Acre Truck, Stop) Hattiesburg, Miss.—Selling amphetamine without physicians' prescriptions. Fined $150; 9 months jail sentence suspended.

Benjamin Marx, t/a Marx Pharmacy, Elmsford, N.Y.—Selling antibiotics, amphetamine, and barbiturates without physicians' prescriptions. Fined $750 and placed on probation for 1 day.

Ferdinand J. Weisbrodt, t/a Weisbrodt Hy-Pure Pharmacy, Glendale, Ohio—Selling amphetamine and barbiturates without physicians' prescriptions. Fined $1,000.

Isadore Arthur Shenk, t/a Garden Pharmacy, Philadelphia, Pa.—Selling antibiotics without physicians' prescriptions while on probation imposed in June 1956. Probation revoked and sentenced to 6 months in jail.

Mick Lukach, employee White Plains Truck Station, Barren Springs, Va.—Selling amphetamine without physicians' prescriptions. Placed on probation for 3 years.

Substandard Drugs

Lit Sales Co., Inc., Stuart W. Lazarus, Pres. Newark, N.J.—Vitamins, rutin, and saccharin contained filth and were prepared under insanitary conditions. Firm and Lazarus each fined $1,000.

FAIR TRADE

Abbott—Di-Deb, Inc. has again been restrained from violating Rhode Island Fair Trade Law by advertising and selling Abbott Pharmaceutical products for less than established fair trade prices. Di-Deb, Inc. operates drug departments at Warwick Shoppers World, Inc., 320 Warwick Avenue, Warwick, Rhode Island, and Coats Field Shoppers World, 457 Lonsdale Avenue, Pawtucket, R.I.

Johnson & Johnson—This manufacturer of surgical dressings, baby, and allied products continues its vigorous support of Fair Trade Contracts and will enforce them whenever price cutting of its products occurs.

"Though no manufacturer has to fair trade his product," states President George F. Smith "we have long believed fair trade reassures the consumer of paying the same price for our products in every store, and will continue our full support of it."

Upjohn Co.—Injunctions have been obtained against 5 New Jersey retailers, namely: Rappaport Spring Drug, Davega Stores Corporation, and Hi-Way Drugs, Inc., all of Springfield, New Jersey; Fruchtman's Prescription and Surgical Center of Summit, New Jersey; and Little Stars, Inc., Shrewsbury, N.J. Injunction is to prohibit them from selling Upjohn products below Fair Trade prices. This company has obtained six similar injunctions against New Jersey retailers, and will name 6 others in lawsuits. They also report a number of FTC violations have been settled without litigation.

FTC ACTIONS

Bishop Hair Experts—Gilbert S. Bishop has been ordered by the FTC to cease and desist from advertising that his preparations will prevent or overcome excessive hair loss or baldness unless such representation is expressly limited to cases other than those known as male pattern baldness, and unless the advertisement clearly and conspicuously reveals that in a great majority of cases of baldness the preparations are of no value whatever. [*Federal Register* 445 (June 20, 1958)]

Tetracycline Regulations

The Food, Drug, and Cosmetic Act has been amended so that tetracycline-novobiocin for oral suspension will henceforth produce a solution containing 12.5 milligrams of tetracycline per ml., instead of the 25 mg. formerly specified, and the expiration data has been extended to 18 months instead of the 12 months formerly specified.

[*Federal Register*, **23,** 3146 (May 13, 1958)].

totaled $539,000,000. These figures compare with sales of $511,000,000 in March 1957 and $519,000,000 in April 1957.

Married Working Couples

Of each 100 married couples in the U.S., 28 are couples with both husband and wife working. A recent Bureau of the Census survey disclosed that there are 10,800,000 working couples.

Since the close of World War II, this trend has been on the increase, particularly among families whose children have reached school age. However, the large majority of married couples which number 24,400,000, or 63% of the estimated 38,900,000 married couples, follow the traditional pattern with the husband as breadwinner and the wife as a full-time homemaker.

College Graduates have Highest Income

One out of ten families was headed by a college graduate, and the average income of these families was about $7,600 in 1956, says the Census Bureau.

By contrast, one out of four families was headed by a high school graduate with an average family income of $5,500. Families headed by elementary school graduates who did not attend high school had an average income of only $4,200.

About two-fifths of all families had two or more income earners in 1956, with average income of such families being $5,800. Families depending on only one earner or depending entirely on income other than earnings had much lower incomes, about $4,100 on the average.

Glass Containers

Drug and cosmetic glass container shipments in 1957 increased to 35,230,000 gross (5,073,120,000 units)—or 25.2% of total domestic shipments. This is the highest amount ever recorded, says the Glass Container Manufacturers Institute, Inc.

As indicated in Chart II, shipments have moved steadily upward since 1930. It is interesting to note that drug container shipments have been about twice the amount of cosmetic and toiletries shipments since 1944.

Glass containers, with a 1957 dollar volume of $784,000,000, rank third in the multi-billion-dollar packaging industry and account for 8% of the total packaging market. Although most people do not realize it, the packaging industry itself is the nation's ninth largest and ranks higher than the eleventh place steel industry.

Book Notices

An Introduction to Pharmacology and Therapeutics

9th ed. By J. A. Gunn. Oxford University Press, London, 1958. ix + 327 pp. 12 × 18.5 cm. Price $4.25.

This introductory textbook had not been revised since 1948. The author notes that the medical practitioner finds it hard to keep up with the rapid and continuous advances in therapeutics; that a student faces a list of outlandish names with which he must associate pharmacological and therapeutical properties. As a discriminatory basis he uses the B.P. and U.S.P. for guidance. The most substantial additions in this revision of the text have been made to antibiotics, hormones, autonomic drugs, anesthetics, analgesics, sedatives, and antihistamines. Noting under "Sedatives" that certain drugs are referred to by the seductive name of "tranquilizers," the author writes: "Their permanent value in therapeutics is not still precisely established. It can be expected that their indiscriminate use will not be without hazard."

Bibliography of Medical Reviews

Vol. 3 for 1958. Superintendent of Documents, U. S. Government Printing Office, Washington 25, D.C. Price $1.25.

Arranged by subject with separate author index and containing 2900 references to review articles in clinical and experimental medicine and allied fields, this bibliography covers all current journals received by National Library of Medicine.

Biochemistry of Some Peptide and Steroid Antibiotics.

By E. P. Abraham. John Wiley & Sons, Inc., New York, 1957. ix + 96 pp. 12.5 × 18.5 cm. Price $3.

This compilation of the 1957 Ciba Lectures in Microbial Biochemistry, at Rutgers University, by Dr. Abraham (Oxford), describes recent work on the bacitracins, the cephalosporins, and their structural and functional relationships to other antibiotics.

British Pharmacopoeia 1958

Published under the direction of the General Medical Council. The Pharmaceutical Press, 17 Bloomsbury Square, London, W. C. 1, 1958. xxvi + 1012 pp. 15 × 22.5 cm. Price 3 pounds, 3 shillings plus postage. Distributed by the Rittenhouse Bookstore, Philadelphia 3.

The British Pharmacopoeia 1958 is the ninth edition since the amalgamation of the London, Edinburgh, and Dublin pharmacopoeias in 1864. Since the 1953 edition, 160 new monographs, which include 60 new chemicals and 100 preparations of these substances, have been added. Among the 138 items not carried over from B.P. 1953 are aromatic spirit of ammonia, belladonna root, chenopodium oil, quassia, nutmeg, and the class of preparations named lamellae.

The antibiotic drugs have been increased by admission of 18 basic substances and their preparations; the corticosteroids have 12 new monographs, including prednisone and prednisolone; and radioisotopes of iodine and phosphorus are included. The newer anthelmintic piperazine derivatives are in and the old chenopodium oil is out. An odorless U.S.P. or N.F. drug might not be odourless by the new B.P. test which states: "Examine a sample of not more than 25 g. (Gm.) immediately after opening the package. If any odour is discernible, transfer the sample rapidly to an open container and re-examine after one minute. If the odour is still discernible, the sample does not comply with the description 'odourless.'"

Under "Indicators" (page 5), the operator is permitted to substitute indicators for one another providing they are in the same range of color change, "but where any doubt exists as to the equivalence of indicators for a particular purpose, the indicator specified in the text must be used."

The Introduction includes a list which shows major differences in titles of monographs in B.P. 1958 and the International Pharmacopoeia, 1st ed., vols. I and II. There are 27 appendixes. Appendix XXI is divided into 3 parts: A, disintegration test for tablets; B, modification of A for enteric-coated tablets; C, required diameters of uncoated forms are listed for official tablets, with the provision that "(a) where the diameter is given as ten thirty-seconds of an inch or more, the stated diameter may be exceeded by not more than one thirty-second of an inch. (b) a deviation of 15% is allowed." Permission is given in 11 out of the 120 monographs on tablets for the addition of a suitable coloring agent to the coating "because unfortunately uncoloured coated tablets have not been made available. Similar provision has been made for some capsules." Where colored and uncolored coated tablets are available the colored tablet is not recognized as the B.P. article.

The B.P. 1958 is a technically excellent book of standards. The members of the British Pharmacopoeia Commission are to be commended on the performance of their duties in compiling this revision.

Casebook in Pharmacy Management

By Floyd A. Grolle. J. W. Edwards, Publisher, Inc., Ann Arbor, Mich., 1958. 199 pp. Price $5.50.

The case method of instruction has been used with success for many years in law, medicine, and business administration. The use of cases is also applicable to pharmacy management but has not been used to any appreciable extent because of the lack of suitable illustrative materials.

This book is the first attempt to provide teaching material obtained from actual drug stores throughout the U.S. It contains 12 chapters covering various management problems. The cases were tested in the author's management class at the Univ. of Mich.

The cases can be used conveniently in conjunction with lectures and regular text assignments.

At the end of each chapter are study questions to guide the discussion of the problems involved. They may be removed from the book and handed in as class assignments or used as convenient space to jot notes relating to reading assignments.

General and specific reading references for each case are provided at the back of the book.

A "Teacher's Guide" will be available to instructors who adopt the book for classroom use. It will contain a short summary analysis of each chapter, in addition to many of the necessary calculations required to analyze the provided financial data.

Clinical Enzymology

Edited by Gustav J. Martin. Little, Brown & Company, Boston 6, 1958. viii + 241 pp. 15 × 23.5 cm. Price $6.00.

This book presents the case for the parenteral administration of enzymes. The text is divided under the headings: Protein biology, Chemistry of enzymes used clinically, Biochemistry of enzymes used clinically, Parenteral use of enzymes in medicine, Diagnostic use of enzymes, Polymerases in biology, and Recapitulation and perspectives for clinical enzymology. References are given for each chapter and a subject index is appended.

Digest of Prepaid Dental Care Plans, 1958

Division of Dental Resources, Public Health Service, U.S. Dept. of Health, Education, and Welfare, Washington 25, D.C. Single copies available on request.

Covering all known plans in U.S., digest is designed to assist groups in organizing prepayment programs.

Members

The Association Extends a Cordial Welcome to the Following Men and Women Who Were Accepted for Active Membership During the Month Preceeding Preparation of This Issue.

ARIZONA
Caldwell, John W., Lowell
Kimberlin, June G., Phoenix

CALIFORNIA
Bruner, Richard C., Ontario
Challed, Eugene F., Whittier
Chidester, T. C., San Diego
Cutter, Fred A., Piedmont
Damele, William J., San Francisco
Graham, Dean M., Palo Alto
Gutierrez, Eliseo, Covina
Harnett, Stanley E., Sherman Oaks
Holzman, Arthur N., Alhambra
Horowitz, Jacob, Whittier
Kato, Shigemi M., Los Angeles
Lanzillotti, Frank G., Glendale
Mackey, Clarence, Jr., Ontario
Mallery, Arthur G., Riverside
Margolies, Marvin H., Sherman Oaks
Masuda, John Y., Los Angeles
O'Neill, William, Berkeley
Pease, Niles, Monterey
Perlof, Sam, Arcadia
Person, Douglas H., Glendale
Phillips, Norma W., Los Angeles
Reinhart, Joseph F., Jr., Los Angeles
Rudzki, Henryk S., Los Angeles
Sargenti, George A., Salinas
Sedgley, Walter, Los Angeles
Smith, James L., Glendale
Smith, Keith B., Atherton
Smith, William P., Richmond
Stamper, Stan, West Covina
Thiel, Charles G., Santa Monica
Webb, Jerene A., Los Angeles
Winestock, Joseph A., Canoga Park

COLORADO
Thebus, John A., Jr., Denver

CONNECTICUT
Burns, Louis J., Danbury

DISTRIT OF COLUMBIA
Sommers, George A.

FLORIDA
Cooper, Robert E., Ft. Lauderdale
Friedman Benjamin Z., Coral Gables
Griffin, George G., Tampa
Silverman, Samuel, Miami Beach

GEORGIA
Agnew, Ruth E., Atlanta
Avera, Homer J., Fort Valley
Shakelford, Ben H., Atlanta

ILLINOIS
Braden, T.E., North Chicago
Dollus, Robert G., Belleville
Gilbert, Charles L., Chicago
Holmquist, Rodney G., Rockford
Inglehart, G. A., Chicago
Kartinos, Nicholas J., Niles
Matheu, John P., Chicago
Schrotenboer, Gordon, Evanston

INDIANA
Jackson, Taylor W., Indianapolis
Jarabak, Rudolph, East Chicago

IOWA
Bjornstad, Otto A., Jr., Spencer

KENTUCKY
Mullins, Harold E., Ashland

LOUISIANA
Earhart, Frederick H., New Orleans
O'Donnell, Mabel C., New Orleans

MARYLAND
Chevrefils, Francis A., Bethesda
Lerner, Carl S., Adelphi
Neistadt, Augusta S., Baltimore

MICHIGAN
Cowles, Cal J., Grosse Pointe Farms
DeWolfe, Allen C., Jackson
Fahl, Lewis M., Detroit
Keltsch, Robert O., Kalamazoo
Milosovich, George, Jr., Utica

MISSISSIPPI
McDuffie, Sam, Nettleton
Moore, Osler A., Jackson

MISSOURI
Barker, Edward L., Kirkwood
Burgard, G. G., St. Louis
Kayman, Eugene, University City

NEBRASKA
Becker, Louise E., Omaha
Hatch, Virgil V., Lexington

NEW JERSEY
Brown, Thomas, Montclair
Fogelson, William E., Rumson
Herman, Bernard B., Pennsauken
Lytkowski, Andrew J., New Brunswick
Prager, Julius, Summit
Pratt, Frank H., Summit
Smith, Frank H., Jr., Allentown

NEW YORK
Armstrong, William W., Oyster Bay, L.I.
Carey, Bernard J., Syracuse
Chansky, Ralph D., Brooklyn
Cox, Robert H., Mt. Vernon
Dauer, Morris, Brooklyn
Devaney, John A., Chazy
Gillap, William R., Mt. Vernon
Hahn, John W., Albany
Henley, Henry H., Jr., New York City
Leyden, Arthur F., Jr., Brooklyn
Rheingold, Jacob, Albany
Schwan, Robert J., Westbury
Squibb, George S., New York City
Stessel, Paul, Pearl River

NORTH CAROLINA
Dever, Robert J., Greensboro
Matthews, Odell A., Fayetteville

NORTH DAKOTA
Baillie, Dan, Rugby

OHIO
Bradfield, Landis R., Cleveland
Dube, Robert A., Toledo
Hoover, John E., Middletown
Lenga, Casimir M., Toledo
Remlinger, W. A., Delphos
Struble, Errold W., Bucyrus

PENNSYLVANIA
Abbott, Donald D , Philadelphia
Meisel, Maxwell S., Downingtown
Shaw, Victor B., West Chester
Stewart, J. Brooks, Philadelphia

TENNESSEE
Hollman, Harold E., Memphis

TEXAS
Burns, Daniel E., El Paso
Hudgins, W. C., Dallas
Reuss, Joe B., Cuero

UTAH
Tensmeyer, Burt J., Ogden

VIRGINIA
Savage, George J., Jr., Cape Charles
Woodard, Geoffrey, Herndon

WASHINGTON
Bailey, Al J., Olympia
Martin, Robert S., Seattle
St. John, Norman N., Seattle

WEST VIRGINIA
Steinberg, Oscar H., Williamson

INTERNATIONAL
Anderson, Ronald A., Koongarra Park, South Australia

Deceased

Barley, Russell M., Westbury, L.I., N.Y., May 30 1957
Carlsen, Harry W., Edina, Minn., May 9, 1958
DeRosa, Anthony J., Jersey City, N.J., Jan. 26, 1958
Henderson, Alexander C., Clearwater, Fla., Feb., 1958 (Life Member)
Herholdt, Fred D., Dover, Del., Nov. 1957
Lehr, Frank P., Cleveland, Ohio, Jan. 1958
Prekopa, Gustav, Miami, Fla.
Salter, F. A., Shawnee Okla., April 30, 1958
Sister Louise de Paul O'Brien, Pittsburgh, Pa., Jan. 8, 1958
Surabian, George, A., Medford, Mass.
Williams, Edith B., Lincoln, Nebr.
Wissler, Raymond B., Philadelphia, Pa., Jan. 17, 1958

Obituary

Mrs. John B. Heinz—The sympathies of the Council and officers of the AMERICAN PHARMACEUTICAL ASSOCIATION have been extended to Mr. John B. Heinz, Past President of the APhA, on his recent bereavement. His wife, who died on May 9, was widely known in pharmaceutical circles, partly because of her activity in the Women's Auxiliary of the APhA.

Coming Events

Pennsylvania Pharm. Assn.—July 20–23, conv.

Kentucky Pharm. Assn.—July 21–23, conv.

National Farm Safety Week—July 20–26. Presidential proclamation.

Texas Pharm. Assn.—July 27–30, conv.

World Health Conf., First Catholic—July 27–Aug. 3, Brussels.

West Virginia Pharm. Assn.—Aug. 10–12, conv.

American Hospital Assn.—Aug. 18–21, Int. Amphitheatre, Palmer House, Chicago.

Pharm. Council of Greater N.Y.—Sept. 4, N.Y. Trade Exposition Bldg., N.Y.C.

Int. Pharm. Fed.—Sept. 8–15, Brussels

New Hampshire Pharm. Assn.—Sept. 14–16, conv.

Maine Pharm. Assn.—Sept. 21–23, conv.

Wisconsin Pharm. Assn.—Sept. 21–23, conv.

Affiliated Drug Stores—Aug., 25–29, Park Sheraton Hotel, New York City.

Natl. Assn. of Retail Druggists—Sept. 28-Oct. 2, Convention and Drug Show, Convention Hall, Philadelphia, Pa.

Nevada Pharm. Assn.—Oct. 5–6, conv.

Vermont Pharm. Assn.—Oct. 5–6, conv.

Employ the Physically Handicapped Week—Oct. 5–11.

Natl. Pharmacy Week—Oct. 5–11. Sponsor: American Pharmaceutical Assn., 2215 Constitution Ave., N.W., Washington 7, D.C.

Natl. Wholesale Druggists Assn.—Oct. 8–13, ann. mtg., American Hotel, Bal Harbour, Miami Beach, Fla.

Prescription Practice

Progress in Medicine

by Samuel W. Goldstein

Boron Absorption Through Skin

Experimental tests show that boric acid and borax in aqueous solution were readily absorbed through intact, clipped rabbit skin, according to the report by H. C. Freimuth and R. S. Fisher, *J. Invest. Dermatol.*, **30,** 83(1958). Gauze pads applied to the skin surface between the forelegs and hindlegs contained one of the following: (1) 5% boric acid solution; (2) a slurry of (1) and talc; (3) 8% sodium borate solution; (4) 5% boric acid in human urine; (5) 5% calcium metaborate slurry; 5% boric acid in ammonia-ammonium carbonate buffer pH 9. Determinations of "control" and post-application concentrations of urine and blood boron indicate that free boric acid in aqueous solution or in solution in urine is readily absorbed. Borax in aqueous solution is readily absorbed. Calcium metaborate and boric acid in the presence of talc are very little absorbed. This is undoubtedly due to the insolubility of calcium metaborate. An increase in pH to 9.0 results in lesser absorption of boric acid from aqueous solution than is the case with boric acid in water alone. This is possibly due to a change in the permeability of the skin at this pH.

Celontin in Convulsive Disorders

Observations in 41 patients with convulsive disorders treated with daily dosages of 0.9–1.5 Gm. Celontin (methsuximide; N-methyl-α,α-methylphenylsuccinimide) show the drug to be a useful anticonvulsant for children and adults, according to Drs. H. M. Keith and J. G. Rushton, *Proc. Staff Meetings Mayo Clinic*, **33,** 105(Mar. 5, 1958). Complete control of seizures was obtained in 5 cases, with improvement in 22 cases; thus 66% of the patients were benefited. Side effects such as drowsiness, headache, rash, and ataxia occurred in about 30 per cent of the patients necessitating withdrawal of the drug in a few cases. The drug is useful in patients with petit mal, minor motor seizures, psychomotor seizures and in a few cases of grand mal. All the patients had electroencephalograms and no relation was noted between the electroencephalographic findings and the therapeutic results.

Framycetin in Gastroenteritis

Clinical use of framycetin sulfate (Soframycin) as a flavored water-soluble powder in daily oral doses, divided into two portions varying from 125 to 250 mg. (50 mg./Kg. body weight) and given for 3 to 12 days (av. 5 days) showed it to be as efficient and potent as neomycin in 25 infants with gastroenteritis due to *E. coli* 0.55:B5, according to a report by R. Louwette and A. Lambrechts, *Brit. Med. J.*, **1,** 868 (Apr. 12, 1958). Diarrhea, dehydration, and vomiting disappeared rapidly and often after two days' treatment, while stool cultures usually became negative within three days.

Meprobamate Treatment for Stuttering

Meprobamate treatment in support of usual speech therapy of 18 patients with secondary tonic or tono-clonic stuttering and defective social adjustment was useful in relaxing the state of tension which provokes and perpetuates stuttering in such cases, according to R. D. H. Maxwell and J. W. Paterson, *Brit. Med. J.*, **1,** 873(Apr. 12, 1958). The patients were seen at intervals of one week during active treatment and later at intervals of one month for a total period of 8 months. Dosage was initially one 400-mg. tablet of meprobamate three times daily, then increased if necessary.

Nicotine Action on Heart

Experimental tests with rabbits show that nicotine not only has an inhibitory action on the rate of the isolated heart but it also has a stimulant action on dissected atria suspended in a bath containing atropine to exclude the inhibition, according to J. H. Burn and M. J. Rand, *Brit. Med. J.*, **1,** 137(1958). The stimulation is due to nicotine releasing noradrenaline and adrenaline from stores within the heart. The investigators believe that smoking may have this effect on humans and thus produce acceleration which could cause or exaggerate ventricular arrhythmias.

Piperazine Salts in Ascariasis, Hookworm, and Tapeworm

Results of the treatment of 770 cases of human ascariasis with different salts of piperazine administered as a single large oral dose are reported by L. G. Goodwin and O. D. Standen, *Brit. Med. J.*, **1,** 131(1958). With piperazine citrate, adipate, and phosphate, a dose equivalent to 3 Gm. of piperazine hexahydrate gave clearance in 76% of cases treated; a 4-Gm. equivalent gave clearance in 82–89%. Piperazine sebacate and stearate gave clearance in 86% of cases given a 3-Gm. equivalent of piperazine hexahydrate but were impracticable in use on grounds of taste or bulk. The efficiency of piperazine preparations appears to be directly related to the content of base and is little influenced by the nature of the salt. Piperazine citrate syrup was found to be the most suitable dosage form. No toxic side-effects were observed after a single dose of 4 Gm. of piperazine.

Trials with piperazine alone, piperazine followed by male fern, and male fern alone, in the treatment of tapeworms (*Taenia saginata*) were carried out by Goodwin and Standen, *ibid.*, **1,** 133(1958). Piperazine equivalent to 4 Gm. of the hexahydrate, when given alone, caused some large segments of worm to be expelled but did not cause the scolex to relinquish its hold on the mucosa. The investigators conclude that further trials are required to decide whether pretreatment with piperazine is advantageous.

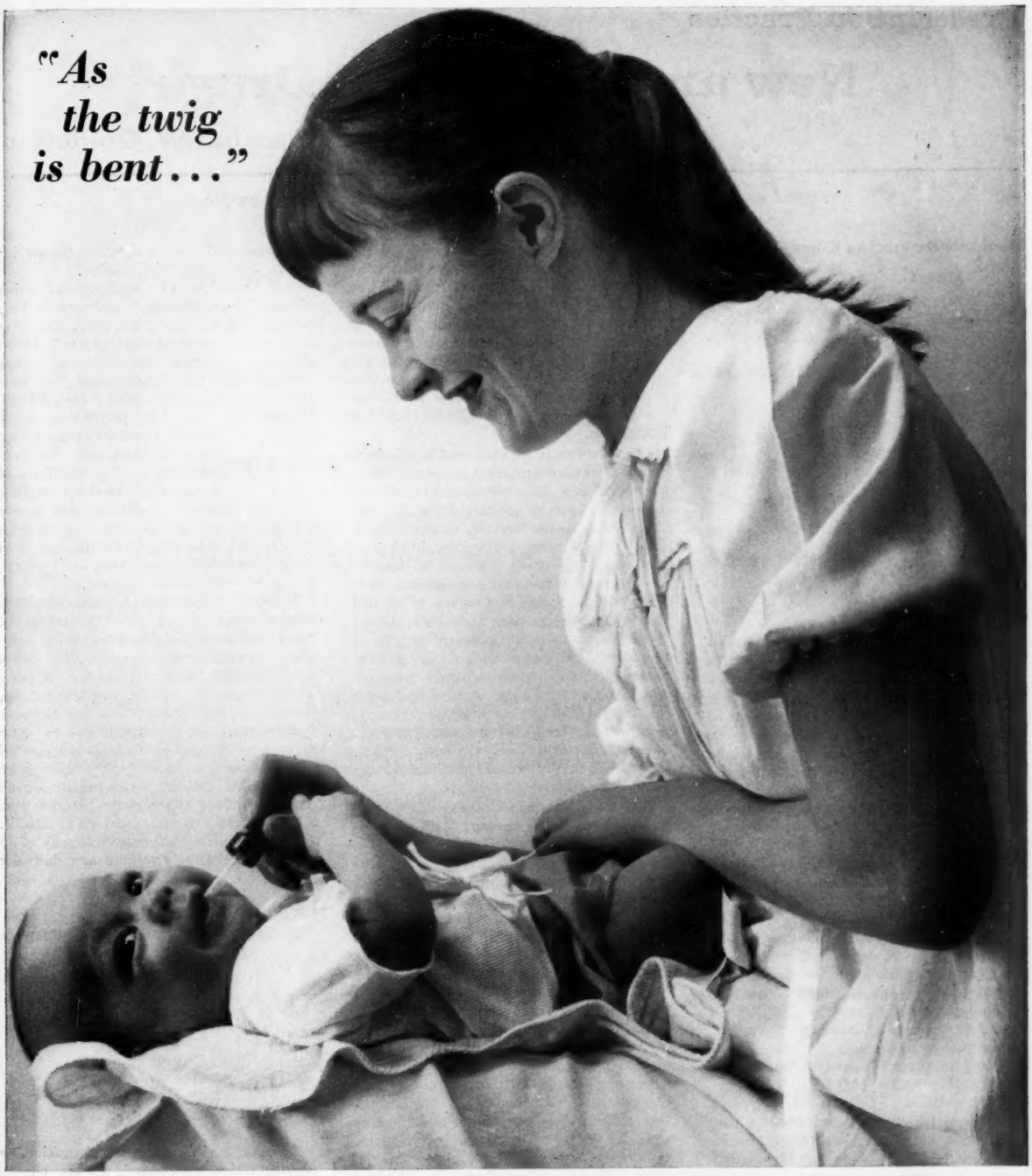
Reporting their tests in patients with hookworm, Goodwin and Standen, *ibid.*, **1,** 135(1958), found no curative effect after treatment with piperazine adipate or phosphate. Subsequent treatment with tetrachlorethylene was fully effective.

Valyl-oxytocin Action in Human

Valyl-oxytocin has been found to be four times as potent as synthetic oxytocin as an excitor of uterine contractions in the human subject, even though the two substances are equiactive by the B.P. method (depression of blood pressure in a chicken or the rat uterus method). Valyl-oxytocin dilutions 1:4 were equiactive with oxytocin in the human subject and also in terms of the rise in milk ejection pressure in the rabbit mammary gland and in the action on the cat uterus *in situ;* but they were not equiactive in their effects on blood pressure (2 units of both drugs i.v. produce a fall lasting about a minute and occurring 2–3 minutes after injection). The study is reported by C. N. Smyth, *Brit. Med. J.*, **1,** 856(Apr. 12, 1958).

Vancomycin in Acute Micrococcal Endocarditis

Clinical trials of vancomycin, 500 mg. i.v. every 6 hrs. with daily total of 2 Gm., in six patients with acute micrococcal endocarditis caused by coagulase-positive *M. pyogenes* (staphylococci) are reported by Dr. J. E. Geraci, *et al.*, *Proc. Staff Meetings Mayo Clinic*, **33,** 172(Apr. 2, 1958). Four of the six patients were considered cured after follow-up periods of 3 to 20 months. Two patients died, both from intractable congestive heart failure.



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Prescription Practice

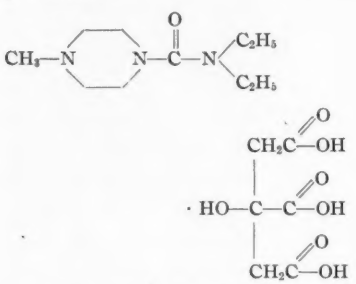
New and Nonofficial Drugs

by Samuel W. Goldstein

Items Recently Evaluated by the American Medical Association Council on Drugs.

Diethylcarbamazine Citrate, U.S.P.

Hetrazan (Lederle); N,N-Diethyl-4-methyl-1-piperazine carboxamide dihydrogen citrate.—1-Diethylcarbamyl-4-methylpiperazine dihydrogen citrate.



Actions and Uses. Diethylcarbamazine citrate is a piperazine derivative with pronounced activity against the microfilarial larvae of certain filarial nematodes. It finds its widest use in the treatment of infestations due to *Wuchereria bancrofti* (Bancroftian filariasis) and, at the present time, is considered the most useful agent available for the chemotherapy of this disease. In both experimental animals and human patients, the drug causes a rapid disappearance of microfilariae. By suppressing or eliminating the microfilariae, diethylcarbamazine also interrupts vector (mosquito) transmission. The extent to which adult worms are killed by this drug is not known. However, if adequate therapy is given, microfilariae do not reappear in the blood in the majority of patients. The type of radical cure thus effected suggests a lethal action against the adult worms of *W. bancrofti*. Diethylcarbamazine apparently is equally as effective in the treatment of infestations due to *W. malayi* (Malayan filariasis). In view of its oral effectiveness, high order of therapeutic efficacy, and relative lack of serious toxic effects, diethylcarbamazine is considered preferable to the older anthelmintics containing antimony or arsenic for the treatment of filariasis.

Diethylcarbamazine citrate also kills the microfilariae of *Onchocerca volvulus*. It is therefore useful for the control of acute symptoms of onchocerciasis, particularly in cases with secondary cutaneous or subcutaneous ophthalmic lesions. Unlike its action in filariasis, the drug exerts no lethal or sterilizing effects against the adult worms of *O. volvulus*; hence, large numbers of microfilariae reappear after therapy is terminated. For this reason, diethylcarbamazine is not considered a curative agent for onchocerciasis. In occasional cases, it may be possible to effect a permanent cure by concomitant administration of the drug and surgical excision of the nodular lesions which contain the adult worms. (Although not without danger to the patient, suramin sodium is the only available agent which is effective for the radical cure of onchocerciasis. When administered intravenously, this drug causes the slow disintegration and death of the adult worms as well as the microfilariae, thus eliminating the infestation.)

Caution should be exercised in administering diethylcarbamazine to patients with onchocerciasis, since severe reactions after a single dose may appear, depending apparently upon the severity of the infestation. Facial edema, pruritus, itching of the eyes, and other signs suggestive of foreign protein reaction may occur. It is believed that these effects are as much due to the mass destruction and absorption of worm bodies as to an inherent toxicity of the drug. Therapy should be discontinued and antihistamine drugs administered at the first sign of such reactions; reinitiation of diethylcarbamazine therapy, if indicated, should be on a cautious basis and in reduced dosage. In severe infestations, especially ocular, maximal dosage should be attained gradually.

Loa loa parasitism (loiasis) is reported to be amenable to therapy with diethylcarbamazine citrate. The drug causes a disappearance of microfilariae and kills adult worms; adequate therapy will therefore result in cure in most cases. The drug has also been employed for the treatment of creeping eruption (cutaneous larva migrans) due to *Ancylostoma braziliense* and, less commonly, *A. caninum*. Although a few reports have been favorable, there is insufficient evidence at hand to establish the ultimate therapeutic value of the drug in this self-limited nematode infestation. Some evidence suggests that the drug may relieve the pruritus associated with this infestation. Diethylcarbamazine is not effective against adult hookworms, whipworms, tapeworms, or pinworms, Its value in other filarial infestations caused by *Acanthocheilonema perstans*, *A. streptocerca*, and *Mansonella ozzardi* is not established.

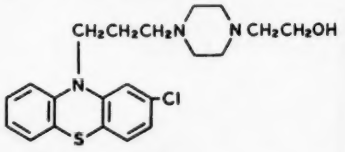
Diethylcarbamazine citrate has been used in the treatment of infestations due to roundworms (*Ascaris lumbricoides*). The drug causes the expulsion of some ascarides by the second day of treatment, but a single course of therapy lasting four days rarely results in the removal of all worms. Since it offers no advantages over piperazine from the standpoint of toxicity and since it is definitely less effective, the employment of diethylcarbamazine for the treatment of ascariasis is justified only in situations in which piperazine is not available or in which sensitivity precludes the use of piperazine.

The toxicity of diethylcarbamazine citrate in experimental animals is low. When used clinically, however, the drug frequently produces side-effects. These are usually of short duration and, except for patients with onchocerciasis, are generally not of a serious nature. Fever, leukocytosis, and lymphadenitis commonly occur during a course of therapy for filariasis. Likewise, headache, lassitude and malaise, nausea and vomiting, and skin rashes are also encountered, in that order of frequency. Except for severe allergic phenomena in conjunction with skin rashes, it is usually not necessary to discontinue medication since most of the other side-effects are transient.

Dosage. Diethylcarbamazine citrate is administered orally, preferably after meals. For the treatment of filariasis, loa loa parasitism, and creeping eruption, the usual dose for adults is 2 mg. per Kg. of body weight three times daily. In acute cases, therapy should be continued for three or four weeks. For the treatment of acute symptoms of onchocerciasis, the suggested dose is 2 mg. per Kg. of body weight given once on the first day, twice on the second day, and three times daily for the next 30 days. In the treatment of ascariasis, the usual course of therapy consists of 13 mg. per Kg. of body weight once daily for four days.

Perphenazine

Trilafon (Schering); 2-Chloro-10-{3-[4-(β-hydroxyethyl)piperazinyl]-propyl}phenothiazine.



Actions and Uses. Perphenazine, a phenothiazine compound, differs chemically from prochlorperazine only with respect to the substitution of a hydroxyethyl group for the methyl group of the latter drug. Perphenazine is approximately twice as potent, mg. for mg., as prochlorperazine and exhibits depressant actions, clinical uses, and side-effects similar to those of chlorpromazine. Thus, perphenazine is useful in the treatment of psychoneuroses predominantly characterized by anxiety, tension, and agitation, in certain psychotic disorders, for the control of hiccough, and also as an antiemetic for the control of nausea and vomiting. Although perphenazine, like prochlorper-

Continued on page 442

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 Contined from page 440

azine, appears to have an over-all clinical toxicity somewhat less than that of chlorpromazine, physicians should be alert to the possibility of the development of jaundice, blood dyscrasias, or neurological sequelae referable to extrapyramidal involvement and should maintain close supervision of patients to avoid these complications.

Dosage. Perphenazine is administered orally, intramuscularly, and, rarely, intravenously. For oral use in the management of mild anxiety and tension states or as an antiemetic, the dose for adults ranges from 2 to 4 mg. three or four times daily. Doses of 4 to 8 mg. three times daily by mouth are suggested for ambulatory patients with psychoneurosis. For the treatment of institutionalized patients with psychosis, the total oral dose for adults ranges from 16 to 64 mg. per day given in two to four divided doses. The usual oral dosage for children between 1 and 6 years of age is 2 mg. two or three times daily; for children between the ages of 6 and 12 years, the oral dose is 2 mg. three or four times a day. A total daily oral dose of more than 12 mg. is seldom necessary to elicit a favorable response in children.

Perphenazine may be injected intramuscularly when rapid effect or prompt control of an acute or intractable situation is required or when oral therapy is not feasible. The usual initial dose is 5 mg. This may be repeated every six hours. The total daily dosage usually should not exceed 15 mg. in ambulatory patients or 30 mg. in hospitalized patients. Oral therapy should be substituted as soon as practicable.

Intravenous administration of perphenazine is not recommended except when absolutely necessary to control severe vomiting, intractable hiccoughs, or acute symptoms, such as violent retching during surgery. When indicated, the drug should be administered at a rate not to exceed 1 mg. per minute, and the total intravenous dose should not exceed 5 mg. The drug is preferably given diluted in isotonic sodium chloride solution, with use of either fractional injection or slow drip infusion.

By all routes of administration, the lower range of adult dosage may be used in children over 12 years of age.

SUPPLEMENTAL STATEMENT

Use of Heparin Sodium in Hyperlipemia

The Council has reviewed and evaluated the laboratory and clinical evidence pertaining to the use of heparin (Heparin, Liquaemin) sodium as an adjunct to the management of hyperlipemia (hyperlipoidemia) associated with atherosclerosis. This agent has been extensively employed as a rapid-acting anticoagulant, and its usefulness in the management of conditions characterized by thrombosis and embolism is well established. (See the monograph on heparin sodium in *NND*). A new and different reason for the use of heparin in hyperlipemia stemmed from the accidental observation in 1943 that the turbidity of plasma caused by alimentary lipemia disappeared completely after injection of heparin into the dog. (When heparin is added to lipemic serum in a test tube, similar clearing does not occur.) This phenomenon, later called the "lipid-clearing" effect of heparin, has now been observed in all species of laboratory animals and in man. Since a single dose of heparin will affect the blood lipids for several days but will reduce blood coagulability for only a few hours, it seems likely that the lipid-clearing effect is independent of anticoagulant activity.

It is now generally agreed that the principal effect of heparin on the blood lipids is mediated through an alteration in their physical state rather than by any significant change in total lipid concentration. Thus, plasma ultracentrifugation studies have shown that the injection of heparin causes a marked shift in the distribution of lipoproteins in human plasma; the drug rapidly converts lipoproteins of low density to lipoproteins of higher density. Some investigators feel that the lipoproteins most affected by heparin, namely, those of low density, are also the lipoproteins most likely to be found in high concentration in atherosclerosis, and indeed this high concentration is believed by some to be the cause of the sclerotic lesions These low-density lipoproteins are also believed to contain abnormally large proportions of cholesterol, and strong evidence of an association between high concentrations of blood cholesterol and atherosclerosis has also been presented in recent years.

Hence, there are some reasons for a trial of heparin sodium as an adjunct to the management of hyperlipemia associated with atherosclerosis. The plasma ultracentrifugation studies have yielded evidence that long-term heparin therapy causes a shift in the lipoprotein pattern toward normal, and such therapy is claimed to exert a favorable influence on patients with overt manifestations of atherosclerosis. Thus, early clinical trials based on this hypothesis have suggested that the weekly administration of heparin reduces the incidence of attacks of angina pectoris. These studies, however, have not as yet been confirmed.

More recently, evidence has been recorded to indicate that survival time after proved myocardial infarction is significantly increased by heparin therapy. Although these results are encouraging, much more long-term study under carefully controlled conditions is necessary to determine whether beneficial effects in postinfarction longevity are due to the influence of heparin on blood lipids or to its anticoagulant effect or to both. Moreover, the ultimate safety of such a therapeutic regimen from the point of view of subsequent hemorrhagic episodes has not been conclusively established.

Although a strict cause-and-effect relationship has not been proved, there is overwhelming epidemiologic evidence that prolonged hyperlipemia is at least one factor linked with the development of atherosclerotic cardiovascular disease. Theoretically then, a sustained shift in the spectrum of circulating lipids would be desirable, both as a preventive measure before the development of symptoms and in an attempt to delay or reverse the process after symptoms have appeared. Heparin sodium has been suggested as a possible therapeutic means of attaining this end. It should be borne in mind, however, that a sizable percentage of the circulating lipids consists of esterified cholesterol and that the influence of heparin on cholesterol concentration is uncertain. For example, no significant change in serum cholesterol levels has been observed when heparin is employed to enhance survival time after myocardial infarction. Furthermore, there is no proof that heparin can effect a lipoprotein shift in patients with hypercholesterolemia but without hyperlipemia.

Since many investigators believe that cholesterol in particular, rather than lipids in general, is the blood constituent most likely to be etiologically associated with atherosclerosis, and since the effects of heparin on cholesterol are so poorly understood, considerable disagreement has arisen as to the feasibility of long-term heparin therapy. On the basis of information available to date, there is no objective evidence that heparin can reverse or eradicate preexisting atherosclerotic conditions. Valid evidence is also lacking that heparin exerts a significant prophylactic effect, either in preventing or in delaying the onset of new disease. Hence, its clinical use as an adjunct to the management of hyperlipemia is considered experimental. On the basis of current knowledge, trial of the drug in patients with proved myocardial infarction may be justified as a possible means of increasing longevity. However, too many gaps in knowledge exist to warrant the routine use of heparin except as an anticoagulant. Only long-term clinical experience will determine its ultimate value in cardiovascular disease.

Because the dosage of heparin ordinarily used for the management of hyperlipemia is less than that used for anticoagulant effects, the possibility of bleeding episodes is appreciably reduced. Nevertheless, long-term experimental therapy with heparin in atherosclerosis should be accompanied by periodic checks on clotting time. Therapy should be terminated immediately at the first indication of abnormal bleeding tendencies. These have been encountered occasionally when heparin was being used for long periods in doses well under those ordinarily used to affect coagulation.

In view of the experimental status of heparin therapy in hyperlipemia and atherosclerosis, no well-defined minimum effective dose has been determined. The most frequently employed dosage is 200 mg. given subcutaneously twice weekly.

Prescription Practice

℞ Information Service

Dithranol B.P. and Anthralin N.F.

We have a British prescription for Dithranol. Is this drug available in the U.S.?—A. J. B., New York.

The British drug Dithranol is identical with Anthralin N.F. Anthralin is usually distributed in the U.S. as the ointment, principally by Abbott Laboratories.

Epanutin

Please let us know what a foreign prescription reading Epanutin kap. requests and if it is available in the U.S.—J. C. K., Pennsylvania.

Epanutin is a foreign trademark for the Parke, Davis, & Co. product which is available in the U. S. under the trademark Dilantin. The generic name for the drug is diphenylhydantoin.

Neo-mercazole—Experimental Lots

See THIS JOURNAL, **19,** *164(March 1958) for note on availability of Neo-mercazole (carbimazole).*

B. J. B. informs us that: "The reply given that Neo-mercazole is not available commercially in the United States is correct. However, we are planning to market this product as 5-mg. tablets in the very near future and are currently making supplies available to qualified investigators."

Neoviasept

Can you give us information about a drug named Neoviasept?—E. S., Texas.

Neoviasept tablets contain, in each: bismuth-N-glycolylarsanilate, 250 mg., and chloroquine phosphate, 75 mg. This combination in tablet form is marketed by Winthrop Laboratories as Milibis w/Aralen diphosphate tablets.

Polio Vaccine and Penicillin

Can you help us with a request for polio vaccine without penicillin for a child very allergic to penicillin?—K. D. M., Massachusetts.

The polio vaccine marketed by Wyeth Laboratories does not have penicillin added during the manufacturing process. Other antibiotics are used instead. Even if penicillin were used in the preparation of the seed virus used to inoculate the production medium, the amount of penicillin in the finished vaccine could be considered to be of no significance. The Wyeth product would appear to be the one most suitable to recommend to the physician under the conditions described. However, the physician should be aware that a test dose of the vaccine used can be given to test the child's reaction; and, in extreme conditions, a penicillinase preparation should be on hand to counteract any penicillin reaction.

Prescription Tolerances

Would it be useful to have official tolerances for extemporaneously compounded prescriptions?—S. P., California.

This question was asked after attention was directed to a printed report, distributed to ophthalmologists, in which the assay results on 36 extemporaneously compounded prescriptions for one ounce of pilocarpine hydrochloride 2% were included. The basis for indicating acceptance of the solutions was an arbitrarily set tolerance of ±5%, which indicated that 58% of the prescriptions were unacceptable. The tolerance assignment system developed by S. W. Goldstein and approved by the Committee on Prescription Tolerances and the Section on Practical Pharmacy is based on a relation of ingredient weight to permissible deviation (see THIS JOURNAL, *Sci. Ed.*, **40,** 186(1951)). This system would assign a tolerance of ±15% to these solutions in which only 600 mg. of the active ingredient is included. It appears that official tolerances for extemporaneously compounded preparations still would be useful to those who would judge the acceptability of compounded prescriptions.

Phenobarbital Sodium, Belladonna Tincture, Aromatic Elixir

We fill a prescription containing: Phenobarbital Sodium 2.2 Gm., Belladonna Tincture 26 cc., and Aromatic Elixir q.s. 240 cc. Tween 20 (2%) produces a clear preparation, but we do not wish to use Tween 20 as a solubilizer since we read in Time magazine (April 7, 1958, p. 96) the following on new FDA regulations banning Tweens from use in commercial ice cream: "...(Monoesters of polyoxyethylene Sorbitan, monoesters of polyoxyethylene glycols, etc.), which have long since been excluded from salad dressings and bread but are still being used in ice cream. In animal experiments, scientists found that such synthetics have dubious effects, including diarrhea and kidney stones."

The article you refer to in *Time* magazine does not refer to recent laboratory tests in the statement that appears to have impressed you. Data obtained by feeding extremely large amounts of Tweens and Spans (5% of the total diet for 2 yrs.) to laboratory animals indicated the possibility of some ill effects under those conditions. However, the U.S. Food and Drug Administration has seen fit to allow the marketing of drug preparations containing these substances, e.g. Monichol (see Red Book) contains 500 mg. Tween 80 in each 5-cc. teaspoonful; and some parenteral preparations contain these solubilizers. Your 2% Tween 20 product would contain 100 mg. in each 5 cc.; but bear in mind the low proportion of the patient's diet this represents. However, if you still wish to eliminate the Tween from your product, we can reconsider the compounding problem with that in mind.

The problem with your prescription is the low solubility of phenobarbital sodium in a relatively high alcohol concentration. Aromatic Elixir contains 21–23% alcohol and Belladonna Tincture contains 65–70% alcohol. Some turbidity might be due to mixing the Belladonna Tincture with the lower alcohol concentration of the Aromatic Elixir. It would appear that the solution to the problem would lie in the use of phenobarbital instead of phenobarbital sodium since phenobarbital elixir, which includes phenobarbital and not phenobarbital sodium, contains only 12-15% alcohol. Filtration might be needed to clarify the final product. Phenobarbital, 2.0 Gm., would be used to replace the 2.2 Gm. of phenobarbital sodium. Moisten and triturate the phenobarbital with a portion of the Belladonna Tincture to reduce the particles to a small size, add the remainder of the Tincture, and then dilute with the Aromatic Elixir to the desired volume. Shake vigorously for a few minutes, let stand to clarify, then filter if necessary.

Alternatively, one could dissolve the 2 Gm. of phenobarbital in 20 cc. of alcohol, add the 26 cc. of Belladonna Tincture, mix, add 110 cc. of Low Alcoholic Elixir (See Iso-Alcoholic Elixir N.F.) to adjust the alcohol content, then add sufficient Aromatic Elixir (about 85 cc.) to make 240 cc. Mix, and filter if necessary.

New Prescription Products

Fungizone for Injection

Description: A dry, sterile, lyophilized yellow powder of amphotericin B (Fungizone), 50 mg., in an ampul. For parenteral use the ampul contents are dissolved in 5% dextrose injection USP.

Indications: In the treatment of mycotic infections, such as: cryptococcosis, coccidioidomycosis, histoplasmosis, North American blastomycosis, and disseminated moniliasis.

Administration: As directed by the physician.

Form Supplied: 50-mg. ampuls.

Source: E. R. Squibb & Sons, New York, N.Y.

Sinaxar Tablets

Description: Each tablet contains 200 mg. Sinaxar (styramate), chemically 2-hydroxy-2-phenylethylcarbamate.

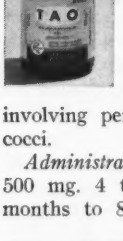
Indications: A muscle relaxant which interrupts nerve impulses in the spinal cord but has no effect on higher centers. Useful in low back pain, muscle strains and contusions, frozen shoulder, muscular rheumatism, stiff neck, bursitis, rheumatic joint pain, fibrositis, myositis, cervical root syndrome, and spondylitis. Does not interfere with judgment or voluntary muscular activity and, in prescribed doses, does not cause gastric upset.

Administration: 1 or 2 tablets 3 times daily.

Form Supplied: Bottles of 50.

Source: Armour Laboratories, Kankakee, Ill.

TAO Capsules



Description: Each capsule contains 125 mg. or 250 mg. of triacetyloleandomycin with glucosamine.

Indications: For control of many common infections, including those involving penicillin-resistant staphylococci.

Administration: Orally, 250 mg. to 500 mg. 4 times daily; children, 8 months to 8 yrs., 30 mg./Kg. body weight in divided doses.

Form Supplied: Both sizes in bottles of 60 capsules.

Source: J. B. Roerig & Co., New York, N.Y. See page 407.

Other New Products

Chemicals, clinical trial drugs, diagnostic aids, equipment for the retail and hospital pharmacy.

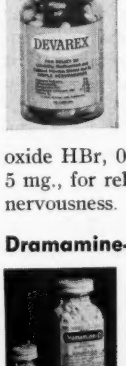
Al-Mg Co-precipitated Gel

A product useful in tablet and powder antacid formulations is marketed as aluminum hydroxide-magnesium carbonate co-precipitate dried gel, type F-MA11, by *Reheis Co.*

Betadine Solution

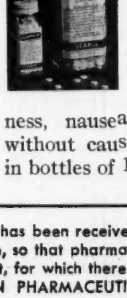
A solution containing 1% available iodine as a complex of iodine and Povidone (polyvinylpyrrolidone, PVP) is marketed by *Tailby-Nason Co.* as a topical antiseptic agent against bacteria, viruses, and fungi. Supplied in pint bottles.

Devarex Capsules



Pharmaceuticals, Inc., has marketed for over-the-counter sale capsules containing, in each: potassium salicylate, 5 gr.; acetophenetidin, 2 gr.; methapyrilene HCl, 12 mg.; scopolamine aminoxide HBr, 0.15 mg.; and vitamin B_1, 5 mg., for relief of symptoms of simple nervousness.

Dramamine-D Tablets



Orange colored, scored tablets containing, in each: Dramamine (dimenhydrinate), 50 mg.; and *d*-amphetamine sulfate, 5 mg., are marketed by *G. D. Searle* for use in control of motion sickness, nausea, vomiting, and vertigo without causing drowsiness. Supplied in bottles of 100 and 1,000 tablets.

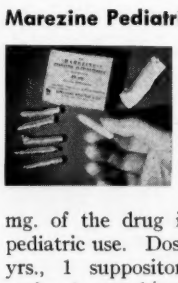
Florinef-S Cream

The Florinef-S combination of fludrocortisone acetate with neomycin and gramicidin marketed by *E. R. Squibb & Sons* is now available as a cream in 5-Gm. tubes. The product has a vanishing cream base and is useful in the treatment of dermatologic conditions characterized by pruritis and inflammation in exposed areas.

Ivy-Eze Lotion

A lotion containing zirconium oxide (from hydrous zirconia) 5%, phenyltoloxamine dihydrogen citrate 1%, oxyquinoline sulfate 0.1%, in a mentholated base, is marketed by *Lloyd, Dabney & Westerfield* for topical prophylaxis and treatment of poison ivy, oak, and sumac. Supplied in 4-oz., pint, and gallon bottles.

Marezine Pediatric Suppositories



The antinauseant Marezine (cyclizine HCl) has been marketed by *B. W. & Co.* in suppositories containing, in each, 50 mg. of the drug in cocoa butter, for pediatric use. Dosage, children 6 to 10 yrs., 1 suppository every 4–6 hrs.; under 6 yrs., $1/2$ suppository (25 mg.) every 4–6 hrs. Supplied in boxes of 12. The adult size (100-mg.) suppository is also available.

Margel-MRT Deltabs

Flavored, gray, scored, chewable tablets containing co-precipitated aluminum hydroxide-magnesium carbonate, nonreactive aluminum hydroxide, calcium carbonate, bismuth subcarbonate, and adsorbent charcoal, are marketed by *Marvin R. Thompson, Inc.* for use in the relief of heartburn and gastric hyperacidity or as an aid in the management of peptic and duodenal ulcers. Each tablet inactivates 100 cc. of 0.1*N* gastric acids. Dosage is 1 to 4 tablets a half hour after meals; 2 tablets will maintain normal acidity for about 90 minutes. Supplied in bottles of 125, with a pocket dispenser.

All actively promoted items on which information has been received in the past thirty days are reported here. Manufacturers are urged to send details of their new products as early as possible, so that pharmacists through these pages will have full information before products are detailed to the physician. For inclusion in this department, for which there is no charge, send descriptive literature to the Editor, New Prescription Products Department, JOURNAL OF THE AMERICAN PHARMACEUTICAL ASSOCIATION, 2215 Constitution Avenue, N.W., Washington 7, D.C.

Medache Tablets

Tablets containing, in each: phenyl. toloxamine dihydrogen citrate, 44 mg-(equiv. to 25 mg. of base); salicylamide. 150 mg.; acetophenetidin, 150 mg.; and caffeine, 32 mg., are marketed by *Organon Inc.* for the relief of pain and anxiety of nonvascular (tension) headaches, symptoms of colds and upper respiratory infections, neuralgia, dysmenorrhea, sinusitis, allergic reactions, and dental pain. Dosage: for nonvascular headache, 2 tablets followed by 2 more in one hour if necessary; for upper respiratory distress, 2 tablets 3 times daily. Supplied in bottles of 100.

Miltrate Tablets

Scored tablets containing, in each, meprobamate (Miltown), 200 mg., and pentaerythritol tetranitrate, 10 mg., are marketed by *Wallace Labs.* for use in the preventive management of angina pectoris. Dosage, initially 1–2 tablets 4 times daily before meals and before retiring, with adjustment as required. Supplied in bottles of 50.

Nebralin Tablets

Smith-Dorsey has marketed timed-release tablets containing, in each: pentobarbital, 90 mg., and mephenesin, 425 mg., for use as a somnifacient. Supplied in bottles of 50.

Neohydrin w/Vitamins Tablets

Tablets containing, in each: Neohydrin (chlormerodrin), 18.3 mg.; thiamine HCl, 0.667 mg.; riboflavin, 0.667 mg.; nicotinamide, 6.667 mg.; pyridoxine HCl, 0.667 mg.; calcium pantothenate, 1.667 mg.; and ascorbic acid, 25 mg. (incorporated as coated granules), are marketed by *Lakeside Labs.* as a diuretic for use in the management of edema of congestive failure, migraine, premenstrual tension, edema of pregnancy, and congestive failure in children. The vitamins are intended to afford protection against nutritional deficiencies which may accompany low-sodium diets and diuresis. Dosage for maintenance of edema-free state is 1 or 2 tablets daily; for more intensive therapy, up to 8 tablets a day may be prescribed. Supplied in bottles of 50.

Obocell TF Tablets

Tablets containing, in each: methapyrilene, 25 mg.; *d*-amphetamine phosphate, dibasic, 5 mg.; and Nicel (methylcellulose), 150 mg., are marketed by *Irwin, Neisler* for use in curbing appetite and suppressing bulk hunger while combating tension associated with a strict reducing regimen. Dosage, 1 or 2 tablets 3 times daily before meals, with a full glass of water; another tablet may be taken at night. Supplied in bottles of 100, 500, and 1,000.

Predmycin Ophthalmic Solution

An ophthalmic solution containing prednisolone alcohol 0.2%, neomycin sulfate 0.5%, and phenylephrine HCl 0.12%, in a buffered, lubricating vehicle, is marketed by *Allergan Corp.* for use in the treatment of inflammatory and infectious eye disorders. Supplied in 5-cc. plastic dropper bottles.

Probilagol Liquid

A solution containing, in each 5-cc. teaspoonful: D-glucitol (D-sorbitol), 4.5 Gm., and homatropine methylbromide, 1 mg., is marketed by *Purdue Frederick* for use in the alleviation of symptoms due to gallbladder dysfunction. Dosage, orally, 1 teaspoonful 3 times daily about 30 minutes before meals. Supplied in 6-oz. and 12-oz. bottles.

Pyribenzamine Lontabs 50 mg.

Ciba Pharmaceutical Products has marketed Pyribenzamine (tripelennamine) HCl in its long-acting tablet form, each tablet containing 50 mg. of the antihistamine. Their 100-mg. size also is available. The 50-mg. tablet contains 16 mg. in its shell and 34 mg. in its core. Supplied in bottles of 100.

Ryprogen Diagnostic Aid

Organon Inc. has marketed Ryprogen (lyophilized Reiter protein antigen) for the serodiagnosis of syphilis. The contents of each 10-cc. ampul, when dissolved in 1 cc. of water and diluted 1:80, is sufficient reagent to perform 800 $^1/_5$ volume qualitative Kolmer complement fixation tests, or 100 $^1/_5$ volume quantitative tests; if the undiluted Kolmer test is used, 160 qualitative or 20 quantitative tests can be made with each ampul. Supplied in 10-cc. ampuls.

Softran Softabs

Flavored Softab tablets containing, in each, 50 mg. Softran (buclizine HCl), are marketed by *Stuart Co.* for relief of mild anxiety tension states. Dosage, 1 tablet 1 to 3 times daily; children, 0.5 tablet 1 to 2 times daily. The tablet may be swallowed or allowed to melt in the mouth. Supplied in bottles of 50 and 100.

Spensin-PS Suspension

A suspension containing, in each 30 cc.: dihydrostreptomycin (as sulfate), 300 mg.; polymyxin B sulfate, 120,000 units; activated attapulgite, 3 Gm.; pectin, 270 mg.; in an alumina gel with methylparaben 0.05%, propylparaben 0.01%; butylparaben 0.04%, is marketed by *Ives-Cameron Co.* for the symptomatic treatment of diarrhea. Dosage, 4 teaspoonfuls (20 cc.) 3–4 times daily before meals; infants and children, initially 2 teaspoonfuls 3 times daily. Supplied in 4-oz. bottles.

Tao for Oral Suspension

A powdered form of 1.5 Gm. triacetyloleandomycin with glucosamine, which mixes with water to make 30 cc. of a cherry suspension containing 125 mg. of drug per 5-cc. teaspoonful, is marketed by *J. B. Roerig* for use in control of common infections. Dosage, 250 mg. 4 times daily; 500 mg. in more severe infections; children 8 months to 8 yrs., daily dose of 30 mg./Kg. body weight in divided doses. Supplied in 2-oz bottles.

Tedral anti-H Tablets

Tablets containing, in each: theophylline, 130 mg.; ephedrine HCl, 25 mg.; phenobarbital, 8 mg.; and chlorpheniramine maleate, 2 mg., are marketed by *Warner-Chilcott Labs.* for use in the treatment of asthma complicated by histaminic allergens. Tedral anti-H should be used with caution in the presence of cardiovascular disease, hyperthyroidism, and circulatory collapse. Drowsiness may occur. Dosage, 1–2 tablets every 4 hrs. Supplied in bottles of 50. See page 441.

Tetrex w/Triple Sulfas Syrup

Bristol Labs. has marketed a syrup containing in each 5-cc. teaspoonful: 125 mg. Tetrex (tetracycline phosphate complex) and 167 mg. each of sulfadiazine, sulfamerazine, and sulfamethazine. This product replaces Polycycline (tetracycline) syrup w/triple sulfas. Tetrex w/triple sulfas is used orally for severe bacterial infections of the G.I. and urinary tracts and for treatment and prevention of meningeal complications following severe respiratory infections in children. Supplied in 2-oz. bottles. See page 332.

Thorazine Spansule Caps. 300-mg.

The sustained-release form of chlorpromazine HCl marketed by *Smith, Kline & French* as Thorazine Spansule capsules is now available in a 300-mg. size in addition to 30, 75, 150 and 200-mg. Spansule capsules. The active period of all sizes is about 8–10 hrs.; differing in intensity of effect.

Vitamar Forte Liquid

A liquid, providing in each daily dose of 1 fl. oz.: *l*-lysine HCl, 300 mg.; iron peptonate, 200 mg.; B_{12}, 10 mcg.; thiamine mononitrate, 10 mg.; niacinamide, 20 mg.; riboflavin, 2.5 mg.; pyridoxine HCl, 2 mg.; and panthenol, 2 mg., is marketed by *Columbus Pharmacal* as a nutritional supplement. Supplied in 8-oz. and gallon bottles.

Robins

JULY CHECK LIST

Tear out for a handy check of your current stock of these Robins products that are receiving **special promotion in your area THIS MONTH**

Ambar®
☐ Tab. 100's ☐ Tab. 500's
☐ Extentabs 100's ☐ Extentabs 500's

Ambar® No. 2
☐ Extentabs 100's ☐ Extentabs 500's

Donnagel®
☐ 6 Oz.

Donnagel® with Neomycin
☐ 6 Oz.

Dimetane®
☐ Tab. 100's ☐ Tab. 500's ☐ Extentabs 100's
☐ Extentabs 500's ☐ Elix. 1 Pt.

Robaxin®
☐ Tab. 50's ☐ Tab. 500's

Allbee® with C
☐ Cap. 100's ☐ Cap. 500's ☐ Cap. 1000's

Why not check your stock of all Robins products at the same time —and be prepared

A. H. ROBINS CO., INC., RICHMOND 20, VA.

JULY

Public Relations

SCHEDULE

■ When the 20,000,000 people who visit retail pharmacies in the United States each day pass out the doors and proceed on their way, there goes the biggest sales potentials and public relations opportunities you've ever had. How did they leave your store! Were they impressed by the appearance of your pharmacy, your employees, yourself? Did they receive courteous enthusiastic service? Will they want to "come back?" If the answer is no to these questions—you've missed the boat.

Special Events—Independence Day (4); Farm Safety Week (20–26).

Speeches—Now is the time to work up a fifteen or twenty minute speech on the subject of "Accidents." Accidents in the home, vacation accidents, or common everyday accidents. Clubs and other organizations will be eager to have you appear on their programs.

Newspapers—A nice newsy article on poison ivy, poison oak, insect bites, etc., will be welcomed by most local and community papers; also, in your ad feature the importance of "seeing your family physician" on all serious health conditions.

Radio and TV—Spot announcements of eight and twelve seconds at 120 words per minute, dealing with professional service and the pharmacists' importance on the community health team will be welcomed by program directors. During summer months they need worthwhile "spot" announcements

Direct Mail—This is a good month to revise your physician, dentist mailing list. Also to outline future mailing programs to laity.

Bulletins—The employees' bulletin this month should feature proper methods and procedures in handling youngsters and children as customers when accompanied by parents or alone.

"Never fear for the want of business. A man who qualifies himself well for his calling, never fails of employment."—Thos. Jefferson

Prepared by J. Warren Lansdowne, Chairman, APhA Committee on Public Relations.

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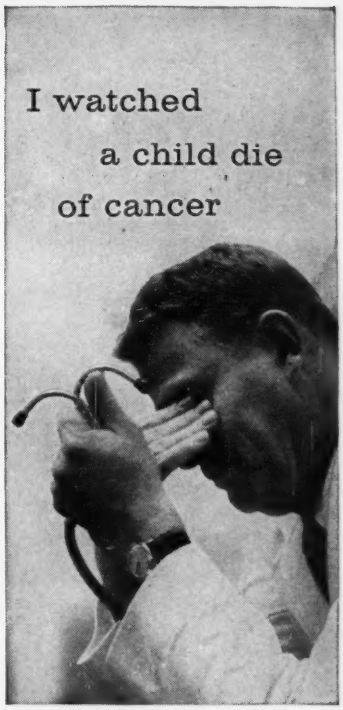

SHE WAS too weak to speak . . . this child of eight. But the words were plain to see in her eyes: *"Can't you make me well again, Doctor?"*

It's terribly hard . . . even for a doctor who sees tragedy enough . . . to watch a child fade from the sunlight of life—a victim of cancer.

We *had* succeeded in prolonging her life by many months—thanks to recent advances in the treatment of leukemia.

But that's not enough! Cancer is a disease that ranks today as the Number 1 disease-killer of children. We can . . . we must . . . find ways to battle it, and *win over it*.

Research, supported by the American Cancer Society, is striving towards that goal.

Let's give . . . boldly, generously to the American Cancer Society Crusade . . . and help eliminate this mortal enemy which will take the lives of more than 250,000 Americans this year alone.

Send your gift to CANCER in care of your local post office.

AMERICAN CANCER SOCIETY

* Cumulative Indexes are presented here for July only. Cumulative indexes for the first 6 months will be found on pages 389–391, June issue. The abbreviations occuring in these indexes are: caps. (capsules), i.m. (intramuscular), i.v. (intravenous), inj. (injection), oint. (ointment), ophth. (ophthalmic), soln. (solution), suppos. (suppositories), susp. (suspension), tabs. (tablets).

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